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ADDRESSES AND ORIGINAL ARTICLES

THE DIAGNOSIS AND TREATMENT OF SOME COMMON MINOR DIGESTIVE DISORDERS.*

BY T. C. HUNT, B.M. OXF., M.R.C.P. LOND.,
PHYSICIAN IN CHARGE OF OUT-PATIENTS, ST. MARY'S HOSPITAL.

CERTAIN common digestive disturbances tend to be rather neglected in text-books, perhaps on account of their comparative triviality, but frequently offer difficulties in practice both in diagnosis and treatment.

Bilious Attacks.

First of all I propose to consider those attacks which are generally described as a "chill on the liver" or more simply as "bilious attacks." The typical *bilious attack* or sick headache is usually just an attack of migraine—though as late as 1860 "bilious headache" was described as a troublesome complication of dyspepsia. Now the absolutely characteristic migraine attack is not such a very common occurrence—that is to say, an attack of one-sided headache occurring periodically, preceded by some form of aura and followed by vomiting and rapid recovery. It may often differ considerably from this typical picture, and this is one reason why migraine is not more frequently diagnosed. The headache may in the first place be quite commonly bilateral, in spite of the meaning of the word itself (which is, of course, derived from the Greek—hemikrania). Definite ocular symptoms may be slight, and, in fact, the typical "fortification figures" are only rarely seen. More important still there is, I am sure, a type of migraine—sometimes spoken of as abdominal migraine—in which headache is entirely absent, and this is a condition of very real practical importance. Its features are as follows:—

Attacks occur at intervals, sometimes quite regularly, with no relation to dietetic errors and without apparent cause; occasionally they seem to follow chill or some mental excitement or emotion. They most commonly begin in early adult life, although an onset later is by no means rare. There is frequently a day or two's preliminary depression, irritability, or lethargy, which is followed by abdominal discomfort or actual pain, and succeeded by vomiting of bile or bile-stained material. Giddiness is a frequent accompanying symptom. There is no pyrexia, but often a very marked mental state of misery and depression, which is very different from the frightened shocked attitude seen in serious surgical conditions of the abdomen. The discomfort or pain is usually situated more in the right hypochondrium and epigastrium, but is not associated with any resistance or rigidity in this area; there may, however, be definite tenderness along the liver edge.

This type of attack is generally recognised as a "chill on the liver"—and this is indeed far from a bad description. It is certain that many such cases in fact occur with hepatic disorder and with gall-stones or cholecystitis.

Somewhat similar attacks may, however, be produced by other causes. There should be little difficulty in distinguishing such conditions as acute appendicitis, but besides migraine and cholecystitis—which I shall refer to again shortly—there are two common conditions which should be considered. The first is so-called gastric or abdominal influenza, the second is acute food poisoning.

Gastric influenza is one of those indefinite conditions whose very existence is denied by many. I am sure that such a condition does, in fact, exist, and in its diagnosis I would stress the following points: Firstly, it is primarily a general disease and only secondly an abdominal one—that is to say, the first symptoms are general: headache, malaise, muscular pains, after which digestive symptoms begin. Secondly, it is rarely or never purely abdominal, and is almost always associated with throat or respiratory symptoms of some degree. These may be in the form of a tonsillitis or just a common cold, occasionally associated with a facial or labial herpes (Picton).[1] There is moderate pyrexia, general aching and discomfort in the epigastrium, slight vomiting, marked anorexia, and great depression. Very rarely there is severe pain, due to spasm of the colon, which may closely simulate acute appendicitis; in "abdominal influenza," however, there is no true rigidity, and little real deep tenderness. A blood count is of the greatest value, as a leucopenia is typical of influenza, whilst appendicitis is associated with a leucocytosis. It is possible that the cause of the pain lies in the muscular coats of the intestine, analogous to the aching pains that occur in the voluntary muscles of the back and limbs. In treatment, the combination of rhubarb and soda is the most efficacious of all dyspeptic mixtures, and aspirin, as a rule, is also useful and quite well borne.

Acute food poisoning, on the other hand, most usually begins as a purely abdominal condition, on which general symptoms supervene. It is almost always associated with diarrhœa, and there is more vomiting: the patient is more collapsed and the pain more severe and colicky. The whole colon may be very tender, but any rigidity over it is generally fairly easily overcome by gentle coaxing. The clinical features, therefore, especially distinguishing abdominal influenza, are the onset as a general disease, the associated tonsillar or respiratory symptoms, and the marked anorexia and mental depression. We should always hesitate to diagnose it if the symptoms are exclusively abdominal.

In the differential diagnosis between abdominal migraine and *gall-stones* and *cholecystitis* there may be considerable difficulty. In all cases it is essential to consider whether the primary factor may not be a migrainous, constitutional, or hepatic one rather than a purely local one of the gall-bladder itself. I have been especially interested in this subject since seeing a number of patients who have suffered from such attacks and have, in fact, had their gall-bladders removed for actual gall-stones or cholecystitis. There are not a few such patients in whom the attacks continue almost unaltered after the operation; many of them seem to be lost sight of, and some are diagnosed as "post-operative neurasthenia." An interesting group was analysed lately by McClure and Huntsinger[2] who found that of 72 cases of "abdominal migraine" 45 per cent. gave evidence, by X ray or otherwise, of chronic gall-bladder disease; but of six such patients whose gall-bladders were removed for true organic disease not one was improved by the operation. In 90 per cent. of these 72 patients some evidence of disturbance of liver function was demonstrable, and I have myself, in a number of cases, found similar evidence. Thus I have quite recently seen 12 patients after cholecystectomy (for definite organic gall-bladder disease) who have continued to suffer from some dyspepsia and from periodic bilious attacks resembling "abdominal

* A post-graduate lecture delivered at the hospital on Oct. 3rd.

migraine." Mr. A. J. Cokkinis kindly allowed me to look up an unselected number of cases followed up by him after cholecystectomy and almost exactly one-third of these patients still complained of dyspeptic symptoms. I feel confident, therefore, that the condition of liver function is a most important factor in determining the symptoms associated with gall-bladder disease. It is, perhaps, no less important to diagnose between attacks of "abdominal migraine" and gall-bladder disease than to decide, if possible, which of the two may be the primary condition. Attacks since childhood or early adult life are against gall-stones being at least the sole cause of the condition. In true cholecystitis there are certain distinguishing features, notably a more or less localised tenderness over the gall-bladder area at the eighth and ninth right costal cartilages; pain is often worse on deep inspiration, and on percussion posteriorly the diaphragm may be found to move less than normally. Sometimes there is definite pain on pressure over the right phrenic nerve between the heads of the sterno-mastoid, which pain may travel to the abdomen and the right shoulder. The cyclical nature of the attacks is not necessarily against organic gall-bladder disease; the patients are, however, less well after the attacks than are migraine subjects, and are liable to flatulence and mild dyspepsia in their free intervals. The flatulence is like that of the "neuropath" and is often made worse by lying down, so that a post-prandial rest may actually disagree with the patient with gall-bladder disease. An X ray is of great assistance, and the results of cholecystography after oral administration of tetrabromphenolphthalein have greatly improved in recent months. Biliary drainage may also be of value. In the diagnosis, however, a careful history is of vital importance. In spite of everything there will still be many cases in which the attacks appear to be hepatic in origin and in which evidence of gall-bladder disease is inconclusive, others in which the attacks cannot be attributed solely to the presence of gall-stones, and some in which they have persisted unchanged after removal of the gall-bladder. There is a large bulk of evidence pointing to an association of hepatitis with gall-bladder disease (Graham,[3] Flint [4]), and I would urge that consideration should be given to the initial cause of liver dysfunction. This may, I believe, be in some cases migrainous or constitutional, in some bacterial. Of the "migraine" constitution we know all too little; the old writers spoke of it as "gouty" and the term uric acid headache was used, though Watson regarded such cases "with jealousy and apprehension." There are no constant stigmata that will enable us to detect such a constitution, which is, of course, typically familiar. Bacterial causes are certainly no less important. Subacute hepatitis may arise from the absorption of toxins or bacteria, both from the gut and from other areas of infection; such hepatitis is not only in itself, I believe, a fairly common cause of dyspepsia, but may allow the passage of organisms into the gall-bladder, causing chronic cholecystitis and the formation of gall-stones. Such a hepatitis may be quite unaffected by the removal of a diseased gall-bladder if the source of the infection is not attacked. Sepsis in the bowel, such as mild colitis or appendicitis, must, therefore, particularly be considered.

TREATMENT.

In the treatment of the underlying hepatic dysfunction in the type of case described there are four lines which I have found to give good results. Firstly, there is often an "aura" of especial tiredness and drowsiness, lasting a day or two before the attacks begin, and I have found quite large amounts of acetone bodies in the urine together with urobilin as tested by Ehrlich's aldehyde reagent. For this reason glucose is well worth a trial, and should be given in full doses of 1 to 2 oz. three times a day during this period. Secondly, I have used with great success Decholin, a powerful cholagogue which has had a wide use abroad. This is prepared by Riedel, of Berlin; it is similar to our Felamine and is a pure preparation of dehydrocholic acid—in other words, the active radical of the normal bile-salts. It may be given intravenously, but I have used it only in the form of tablets by mouth (two tablets three times a day). It is undoubtedly a powerful stimulant to biliary excretion, and probably also to the liver cells themselves—in other words, it is a choleretic as well as a cholagogue. Furthermore, such bile-salt preparations directly aid in the absorption of fats and also in the stimulation of the pancreatic secretion by virtue of their adsorbing action upon secretin (Mellanby). Patients should be warned that decholin may cause some abdominal discomfort at first, and this I think is sometimes due to pre-existing stasis of bile in the smaller ducts and the unaccustomed passage down them of larger amounts of bile. Thirdly, I have used drainage of the bile by duodenal catheterisation with success in a number of cases, though it sometimes requires carrying out on more than one occasion. Finally, the diet is, of course, of importance, and in this respect I am quite sure that quantity is of far more importance than quality; in some patients the fat tolerance is quite good, but few are able to take really large meals without some discomfort. Ices and cold drinks seem to be specially bad in cases of cholecystitis, and eggs are apt to cause so much distress that their administration has even been suggested as a diagnostic measure (Schmidt [5]). In migraine without gall-bladder disease it is rare to find any one article of diet that is especially prone to provoke attacks; the patients are, in fact, able to take a free diet without special consideration, and the best advice is just that of moderation.

Briefly to sum up, I have described a type of bilious attack which we may call abdominal migraine, that may occur as a true constitutional disorder or in association with gall-bladder disease. Differentiation may be difficult, and even if the gall-bladder is diseased its removal may not relieve the attacks. The underlying cause in both cases is often a metabolic liver disturbance, and may be treated successfully by the administration of glucose, bile-acids (e.g., in the form of decholin), moderation in diet, and sometimes by duodenal drainage of the bile. I will give one typical example of the results of treatment in such cases:—

The patient was first seen in February, 1930, aged 30. He had suffered from bilious attacks for seven years. They had occurred at intervals of about three weeks, and were associated with an initial period of drowsiness lasting one or two days, abdominal pain, and profuse biliary vomiting. The attacks lasted for two or three days and entirely incapacitated the patient; they were not associated with headache or jaundice, but constipation was present before and during the attacks; there were no ocular symptoms. His appendix had been removed in 1923; pyelography in 1924 showed nothing abnormal; in 1927 the gall-bladder was removed and calculi were found. He had been in many hands, but the attacks had been quite as frequent in spite of dietetic and other treatment; cholecystectomy had been entirely without influence. His father had suffered from similar attacks. The urine examined at the onset of an attack showed considerable amounts of acetone and urobilin. After this I ordered him glucose $\frac{3}{4}$ twice a day and decholin tablets 1 t.d.s., with instructions to double the dose of both if he felt an attack developing. Since then he has

had no further attacks at all—a period of seven months—although previously for six years he had not been free for longer than four weeks.

Functional Dyspepsia in Young People.

One or two types of dyspepsia which occur in young people are generally regarded as nervous or functional. Functional dyspepsia covers a large number of conditions, and there is one very good reason why this is so. It is this: nervousness may be a cause of indigestion, or indigestion may give rise to nervous symptoms. A healthy person—especially if he has neurotic tendencies—who begins to suffer from pain and discomfort after his meals, may quickly become irritable, nervous, and hypochondriacal (which is readily understandable). On the other hand, a primary nervous disorder may be the cause of digestive disturbances, and it is in this distinction that the key to diagnosis and treatment lies. A primary nervous dyspepsia is an undoubted clinical entity: hypnotism, for example, can produce it experimentally and the effects of worry and emotion upon digestion and appetite are too well known to require any emphasis. Such a dyspepsia, however, though at origin nervous may, by poor appetite and loss of tone, easily set up a true *secondary* organic catarrh of the stomach or bowel, in a way analogous to the nervous symptoms which so readily become grafted on to a primary organic disease. In the differentiation therefore of the primary cause the most thorough questioning as to the exact beginning of the digestive symptoms is a vital point. Is the dyspepsia preceded by "nervousness," or does the nervousness follow the dyspepsia? Is there an onset of general nervous symptoms following shock, anxiety, disappointment, or have the general symptoms come on later after an initial gastro-enteritis or other acute digestive disorder? The distinction is important in diagnosis, although in either case the digestive organs must *themselves* be treated whether their disorder is primary or secondary. The nervousness alone is not all that requires treatment. To illustrate this point and to emphasise the origin of these two forms of dyspepsia, I want to describe a type of case that we commonly meet with in practice.

The patient is a young girl who complains of almost constant abdominal discomfort, severe flatulence, tiredness, fatigue, and most usually constipation. The symptoms are generally regarded as neurasthenic. In many instances they are in fact due to neurasthenia, but there are two other causes that I want especially to discuss. These are hyperthyroidism and pulmonary tuberculosis. Now these three conditions—neurasthenia, hyperthyroidism, and pulmonary tuberculosis—may very closely resemble each other not only in their general features, but also in their digestive symptoms. *Neurasthenic dyspepsia* has certain more or less typical characteristics. The indigestion has little or no relation to meals, is often relieved by highly "indigestible" foods, and is generally almost or completely absent on holidays: it is often better when the patient is working. It is apt to be bad as soon as the patient goes to bed, and dyspepsias that are made worse by the recumbent position are very frequently neurasthenic. The patient is tired and yet restless and a bad sleeper. There is often domestic and especially sexual worry, and marriage and new surroundings will sometimes abolish every symptom. The condition is sometimes associated with a spastic colon, in which case there are attacks of sharp abdominal pain and marked constipation, occasionally with the passage of mucus in the stools. The patient is sure that her constipation is the cause of all her troubles, and has abused strong purgatives without any improvement in her condition. The symptoms are much worse before any nervous excitement and after emotional disturbances. The condition is essentially polysymptomatic and not digestive alone. On examination there is often a little tachycardia and the blood pressure is low. The basal metabolic rate is not raised.

In *mild hyperthyroidism*, dyspeptic symptoms are common, occurring in probably 30 to 40 per cent. of all cases. The patient is unduly nervous but there may be no eye signs or obvious fullness of the thyroid. There is a little tremor—much finer than that of neurasthenia, and the systolic blood pressure is a little raised; at the same time there is a low diastolic pressure so that the pulse pressure is perhaps 60 or 70 instead of 40 or 50. The tachycardia is persistent and does not disappear with rest in calm surroundings as does that of neurasthenia. The basal metabolic rate is higher than normal and can be approximately judged by combining the resting pulse-rate and pulse pressure according to Read's formula. I have found this a really useful, simple guide, the formula which I use being merely $\frac{3}{4}$ (PR + $\frac{3}{4}$ PP) − 72. In some cases there are attacks of diarrhœa. The cause of this "thyrotoxic dyspepsia" is variously thought to be connected with gastric achylia (vide Moll and Scott, THE LANCET, 1927, i., 68), hyperperistalsis and rapid emptying of the stomach, hypervagotonia, and an excessive flow of bile into the intestine. Whatever be the cause there is one point of great importance—when gastro-intestinal symptoms are really severe in hyperthyroidism the outlook becomes extremely bad.

Prof. F. Langmead has kindly allowed me to review his cases on the Medical Unit, and including the patients I have personally studied, I found that among 64 cases of Graves's disease and "toxic goitre," of eight who complained of severe attacks of diarrhœa and vomiting every one died within quite a short time of the onset of these attacks. In the prognosis therefore of Graves's disease I am sure that a history of attacks of severe diarrhœa and vomiting must make us very guarded as to the outcome. Mild dyspeptic symptoms were present in almost 50 per cent. of the cases, but they have no such serious significance.

Pulmonary tuberculosis, as of course everyone knows well, may have an onset with dyspeptic symptoms although cough and sputum may be entirely absent. The toxæmia of a latent phthisis should, I think, be always in our minds in youthful dyspepsias, especially of thin and nervous girls. It may be that besides the toxæmia, nervous reflexes from the sensory fibres of the vagus in the lungs lead to hypermotility and hypersecretion in the stomach and intestines. In these cases there is generally a slight evening pyrexia and I would do not more than remind you of the importance of taking the morning and evening temperature (if possible rectally) for at least four days in such patients.

There is, finally, one type of *nervous dyspepsia in young girls* which I think almost deserves a special name. It is that associated with marked thinness, amenorrhœa, constipation, and visceroptosis. The patient is generally suspected of being tuberculous. It is an atonic dyspepsia of thin people. A test-meal shows a delayed but normal gastric acidity, and an X ray of the alimentary tract shows only some visceroptosis but no great delay in gastric or colon emptying-time. The symptoms are almost all digestive so that the condition is more monosymptomatic than is a purely nervous dyspepsia. I think you will all know cases of this type, but I hope you will forgive me if I read you the little

account which one such patient whom I recently saw wrote out for me:—

"Cessation of periods for three months; stomach always filled with gas; fullness after meals; burning pain after meals; food repeats no matter how light. Spots (etc.) before eyes; dizziness after stooping; feelings of sickness at times; heart thumps loudly and quickly after meals; ache across stomach at times; food remains in stomach for hours; constipation; no appetite or energy; feeling that stomach does not open properly."

Such a condition as this is sometimes wrongly attributed to ovarian deficiency, and one is apt to think that marriage will probably put an end to all the complaints. The patient whose account I read to you was, in fact, married shortly after I saw her, but there was no relief whatever in her symptoms (which was, I admit, a disappointment to me).

INSULIN AND APPETITE.

I am sure that the fundamental cause of the digestive symptoms is the visceroptosis and thinness, and in treatment the essential thing is to produce, if possible, a definite gain in weight; if this can be achieved the increased fat in the abdomen supports the stomach and colon and there is a marked improvement in the condition. Ordinary gastric sedatives, bromide, and measures directed towards the constipation seem ineffective, and a holiday and change of surroundings also lead to little improvement. In such cases I have lately had the most striking and satisfactory results from the use of insulin. It is often a most difficult thing to improve appetite or increase weight by other means. The details of treatment are as follows:—

The patient is ordered 5 units of insulin twice a day half an hour before lunch and dinner, and a plentiful supply of barley sugar or, better, actual glucose itself; the latter is not very expensive and can be taken with lemonade in tablespoonful doses three times a day. The ber fit is sometimes most striking; the appetite improves and the gain in weight is really very remarkable. The dosage can be increased up to 10 units and 5 units, and if necessary up to a maximum of 30 units spread over the day. The injections should be continued for three weeks, after which the improvement most usually continues, though a second course may be necessary later. It seems as though the pancreas is given a stimulus which causes a continued overactivity, and I think in some degree leads to an increased output at the same time of its external secretion containing the digestive ferments. There is, indeed, considerable evidence that insulin provokes both gastric, pancreatic, and biliary secretion (Okada[6] et al.); it increases gastric acidity (Gurwitsch[7] et al.) and seems to lessen spasm (Simnitzki[8]). Thus, although insulin treatment in such cases is primarily a fattening process, I feel sure that there is, in fact, more than this alone involved. Insulin is a *tonic*, perhaps the best true tonic that we have, in that it is the most powerful drug stimulant of appetite that we possess. Mild hypoglycæmia is associated with a craving for food and a voracious appetite—which it is, of course, essential to satisfy. On no account must food be delayed after the injection, and trembling, sweating, vertigo, or other hypoglycæmic symptoms *must* be prevented. I have seen two cases in which such attacks had unfortunately been provoked and led to purely neurotic attacks subsequently of similar type. Two cases recently treated on these lines are as follows:—

(1) The first was a girl, aged 21, who complained of obstinate constipation, great flatulence, and discomfort after meals, and amenorrhœa during the last 3½ years. When first seen she weighed 6 st. 5 lb. An X ray showed some visceroptosis, and a fractional test-meal a normal though delayed acid secretion; there was no evidence of pulmonary tuberculosis or other organic disease. She was given insulin 5 units twice a day, and in 12 days gained 6 lb.; the insulin was increased to 10 units in the morning and 5 at lunch time, and continued for a further five weeks, after which her weight had gone up to 7 st. 9 lb. Her improvement continued and one week later her periods recommenced; three months after beginning insulin her weight had risen to 8 st. 5 lb.—a gain of exactly 2 st. Her constipation was less and her dyspeptic symptoms had almost entirely disappeared. She was given no other drugs, and the bowels were treated with occasional simple enemata only.

(2) The second case was that of a girl typist, aged 26, who had complained of nausea and flatulence after food and general dyspeptic symptoms for six years. During this time she had attended many doctors and undergone numbers of treatments by dieting and drugs without improvement. The menses had been very scanty and irregular for three years, and amenorrhœa had been present for the last five months. There was definite visceroptosis and marked constipation. When seen her weight was 5 st. 11 lb. She was put on insulin 5 units b.d., and in four weeks gained exactly 1 st. The insulin was then omitted and she was sent away to the sea for one month during which time her weight rose to 7 st. 3 lb.; her appetite has returned, she has lost her dyspeptic symptoms, and her periods, which began again three weeks after starting insulin, have been regular ever since.

OTHER SYMPTOMATIC TREATMENT.

I am sure that the use of insulin in this type of dyspepsia is a real advance in treatment; it is also useful in those dyspepsias of hyperthyroidism, pulmonary tuberculosis, and sometimes neurasthesia, which I have already discussed. In addition to this fattening and tonic treatment by insulin, other symptomatic treatment in this group of dyspepsias may be required towards the flatulence and constipation. I am sure that in both suggestion and reassurance is of importance. Flatulence is rarely or never due to actual fermentation in the stomach (apart from organic pyloric obstruction), though it occasionally occurs with the diarrhœa of "fermentation" in the colon. This should be told the patient, who must realise that her wind must come from swallowed air, and cannot be locally produced in the stomach itself. The constipation is, in many cases, hardly constipation at all, but a mere dyschezia or retention of fæcal material in the rectum. I am sure it is often the subject of far too great a concern on the part of the patient. We know all too little of the actual toxic effect of chronic constipation. At least, it is certain that there is often less danger in constipation than in the diarrhœa produced by violent purgatives. Most of the putrefactive bodies of the indol group which are formed in the intestine seem to be astonishingly non-productive of symptoms when injected into man, and the healthy bowel mucous membrane appears to be relatively impermeable to such substances; on the other hand, irritants such as drastic purgatives would seem to damage this lining sufficiently to allow poisonous substances access to the blood stream. I am sure that in a number of patients constipation is a relatively harmless condition, compared to the bad nervous effects which too much attention to it provokes; there is also that large group of cases of "spastic constipation" which are probably the direct result of a primary neurosis. This being so in the type of case that I have described, the constipation should be treated by a full reassurance to the patient that no harm will result if the bowels are not open as often as she would consider necessary; nor would her life be in peril if they were, in fact, only open every third day.

It is thus wisest to allow a simple enema every third day, and usually with the insulin course, a mild sedative, and a bigger appetite and diet, the bowel soon resumes a more regular evacuation. All drastic purgatives should, therefore, be banned, and the work of Mellanby has suggested that even liquid

paraffin may have detrimental effects upon digestive processes. I have found that a dose of 1 oz. of lactose, in tea, first thing on waking up in the morning, acts as a most useful laxative and also aids in improving weight.

A *diet* that calls for a minimum of demands upon the gut is advised, but I am sure that too many restrictions fix the patient's attention too much upon her digestive organs. It is a limited and narrow outlook on life when every thought is directed to the choice of food and to a satisfactory evacuation of the bowels every morning.

In the true neurasthenic dyspepsia, I am sure that *change* is the most important thing of all in treatment. The dyspepsia must be treated, but treat it in new surroundings—the neurosis must be treated, but treat it with new thoughts! Imagination is not the cause of all the symptoms—they are largely just a "habit of illness" as little under voluntary control as are the healthy habits of appetite or sleep. The habit must be taken in hand rather in the way that a drug, drink, or tobacco habit must be taken in hand. A serious dyspeptic habit is unlikely to be broken at home; the first step of treatment, therefore, must often be institutional. Finally, may I read you the advice of Thomas Watson,[9] who wrote in 1860 of this condition:—

> "... of the concomitants of dyspepsia one is hypochondriasis ... in truth a species of insanity ... in which the patient becomes a plague to himself as well as to his physicians ... The management of his mind is particularly nice and difficult; it will not do to treat him as if his ailments were imaginary: he disbelieves you, contemns your judgment and deserts you, to be fleeced perhaps by some villainous quack; you must hear what he has to say; show an interest in his case, and prescribe for him; assuring him that you understand his malady, that it is curable, and that he will be cured provided he follows your directions; if you can succeed in gaining his confidence ... the battle is half won. To tell such a person not to think of his grievances would be worse than useless. The very effort to drive a subject from our thoughts fixes it there the more surely. But you must endeavour to turn his attention to other things, and to awaken in him some new interest. Prescribe change; change of air, change of place and scenery, change of society. Get him to travel in search of health."

Dyspepsia in Old People.

The third class of digestive disorders that I want to consider in contrast to the last types are two forms of dyspepsia occuring in old people.

Enlarged Prostate.—In the first type the patient is a man of, perhaps, 60 or 65 who complains of gradually increasing attacks of discomfort in the epigastrium, of moderate intensity, rather worse after meals, but unaccompanied as a rule by vomiting or irregularity of the bowels. The age makes us at once suspect a carcinoma, and there is often a sallow cachectic dried appearance of the skin that appears at first sight to bear out the suggestion. On the other hand, there is no abrupt beginning of the indigestion in the middle of perfect health, as is often the way with carcinoma of the stomach, nor is there gross anorexia, especially for meat, such as occurs so characteristically in this condition. The tongue is furred and dry. The cause to which I am referring is an enlarged prostate. I am sure that there is much in the old aphorism that "old men with gastric ulcers have got enlarged prostates," and prostatic or genito-urinary dyspepsia is a common condition that may easily escape recognition. Patients will frequently ignore or take for granted some increased frequency of micturition or hesitancy in the stream, and will only admit such symptoms on direct questioning. There is no doubt, however, that quite moderate prostatic enlargement may be a cause of symptoms referred to the digestive organs, and the alimentary symptoms may quite overshadow the prostatic. The condition never occurs below the age of 50. In some cases the dyspepsia is directly due to definite urinary obstruction with renal damage and mild uræmia. In a number, however, it does not necessarily imply nitrogen retention in the blood and the exact explanation is difficult. The diagnosis is relatively simple if the possibility of prostatic dyspepsia is borne in mind. The absence of colon symptoms with diarrhœa and blood and mucus in the stools, the fairly good appetite, which is often capricious, and the discovery of an enlarged prostate per rectum, are the important points. The finding of a small amount of residual urine—say 1 or 2 oz.—on catheterisation is characteristic. The stools should be examined for occult blood, which can be very simply done with the use of benzidine tablets—a test that should never be omitted when carcinoma of the stomach is suspected. The blood-urea will be raised in a few cases, and should be examined if there are other symptoms suggesting true uræmia, such as headache and drowsiness and a urine of low and fixed specific gravity. An X ray of the alimentary tract or barium enema may be necessary finally to remove all doubts. The treatment is essentially surgical, though this decision requires great judgment; the improvement in digestion after operation is often remarkable.

ARTERIO-SCLEROTIC DYSPEPSIA.

The second type of dyspepsia of old age is one to which I can find little reference in the text-books and is, I fear, a rather ill-defined, though, I think, common condition. It is not unlike prostatic dyspepsia and its diagnosis must be largely reached by a process of exclusion. This type I would call arterio-sclerotic dyspepsia. The patient is typically a man of rather nervous temperament who complains of indigestion and rheumatism. The latter amounts to aching or sharp pain in the arms and legs, sometimes of the true intermittent claudication type coming on in cramp-like fashion after moderate or severe exertion, but unaffected by changes in the weather. There is also pain in the epigastrium after meals, which occasionally amounts almost to colic, but is more usually a dull, gnawing pain which is not severe enough to cause vomiting. There is obvious thickening of the peripheral vessels, and the retinæ show the typical changes of arterio-sclerosis; sometimes there is associated headache and nocturnal polyuria, with the urinary changes of interstitial nephritis; the blood pressure is usually raised, though often not above 180-200 mm. The digestive disorder may thus be very similar in ætiology to the genito-urinary dyspepsia as seen in association with an enlarged prostate, and I would not wish to draw too sharp distinctions between the two groups. On the other hand, arterio-sclerotic dyspepsia is, I think, due to an actual vascular change in the gastric and mesenteric vessels and abdominal aorta. There have been a large number of interesting experiments showing the different response of normal and arterio-sclerotic vessels to varying stimuli, in some cases as studied upon the stomach vessels themselves (Lange[10]). Thus heat and cold cause very different responses in normal and diseased vessels, and it is reasonable to suppose that the entrance of food into a stomach poorly supplied with blood by diseased vessels may lead to abnormal function, both motor and secretory. The treatment must be largely dietetic and iodides and vasodilators do not appear to exercise very much influence.

I am sure that the old rules laid down by Abernethy are especially applicable in this type of patient, and

deserve even more to ensure his lasting remembrance than does his famous blue pill. The advice he gave is: (1) allow six hours between meals; (2) eat slowly—chew very well and rest after meals; (3) take small amounts at a time; (4) dine off one dish—a rule that was designed to avoid mixing and has definite experimental evidence to support it. Thus, starchy food and meat together should only be taken with care, and I am quite sure that in the dyspepsia I am discussing meals of many ingredients are an important factor in provoking symptoms. I believe there is much still to be learnt in the reaction of foods upon each other during digestion.

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A STUDY OF
PLASMA-PROTEIN LOSS WITH ŒDEMA
BUT WITHOUT PROTEINURIA,
AND ITS BEARING ON THE CONCEPT OF NEPHROSIS.

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THE relationship emphasised by Epstein, Govaerts, Shapiro, Van Slyke, and others between œdema and the lowering of the protein content of the blood plasma in cases exhibiting chronic albuminuria, has been the subject of increasing comment during the last decade. Summarised briefly, the current view is that when the plasma proteins become depleted by protein loss via the kidney, œdema appears, it being assumed that the passage of fluid from the blood into the tissues is either a compensatory mechanism endeavouring to restore the concentration of plasma-proteins to normal, or that the diminution of these proteins in the blood stream so lowers the colloid osmotic pressure that the normal reabsorption of water from the tissues into the venous capillaries is prevented.

Recent work by Govaerts has shown that the albumin is the most important factor in regulating the osmotic relations of the blood and tissues, and that when the depletion is mainly at the expense of this fraction œdema appears early. As to the actual degree of albumin depletion at which œdema appears there is still doubt, nor do our own observations enable us to define the critical limit with exactitude. A fair average figure for the total plasma proteins in cases showing œdema is 4 per cent., with an albumin content of 2 to 3 per cent.

It has appeared to us that interesting results might be obtained by studying cases in which considerable loss of plasma proteins has occurred by routes other than the kidney. Such a group of cases is difficult to find, but study of a series of patients showing massive ascites due to various conditions indicates that in this group suitable cases occur. The protein content of many ascitic fluids is relatively high, and when it is remembered that very large quantities of such fluids often accumulate in the abdomen it is apparent that a severe loss of protein from the blood may occur. It is also well known clinically that such patients frequently exhibit œdema of the arms and legs which up to the present has not been explained. Œdema of the legs has often been assumed to be due to pressure on the pelvic veins, but a similar explanation cannot hold with regard to the upper extremities. It occurred to us that the œdema of such patients might be due to depletion of the plasma proteins via the ascitic fluid, and it was felt that a careful comparison between the blood and urine, &c., in these cases and in patients showing œdema associated with the heavy albuminuria of "nephrosis" would prove instructive. Certain other cases showing œdema of unexplained origin have been examined. Blood analyses revealed a similar depletion in protein content, and, as will be seen later, an explanation for the protein loss is suggested.

CASE 1.—Female, aged 64. Three weeks before admission she caught a chill. She then noticed swelling of abdomen accompanied by breathlessness. A fortnight later the legs began to exhibit increasing œdema. Heart and kidneys normal. Ascites was present, causing much distention, and it was decided one week after admission to tap her abdomen to relieve her increasing dyspnœa. Fluid drained quite easily, but later patient collapsed and died.

Autopsy.—Only a partial post-mortem examination could be obtained and diagnosis was not established; both kidneys were, however, examined and found to be normal, both macroscopically and microscopically.

Biochemical observations—

Blood.	Non-protein nitrogen	26 mg.	per 100 c.cm.
	Urea	26 ,,	
	Albumin	3·36 g.	
	Globulin	1·43 ,,	
	Fibrinogen	0·5 ,,	
	Cholesterol	220 mg.	

Urine.—No albumin; no abnormality.

Ascitic fluid.	Non-protein nitrogen	35 mg.	per 100 c.cm.
	Urea	33 ,,	
	Albumin	4·43–4·9 g.	
	Globulin	1·1 –1·0 ,,	

CASE 2.—Male, aged 57. Four years before admission he noticed definite pallor and shortness of breath, accompanied by œdema in limbs and other parts of the body. At first diagnosed as cardiac failure, he was later treated as a severe anæmia by means of liver extract. The œdema persisted. His appetite began to fail some ten months later. He never complained of nausea nor vomiting, but flatulence troubled him. On admission massive œdema was present in legs, upper limbs, and abdominal wall. Heart normal; free fluid was present in abdominal cavity. A test-meal performed strongly suggested an advanced carcinoma of the stomach; occult blood in stools; death occurred six weeks after admission.

Autopsy.—Carcinoma of pyloric end of stomach. Secondary deposits in lymph glands. Anæmia, fatty myocardium, anasarca. Streptococcal infection of ascitic fluid (8 pints). Kidneys normal, both macroscopically and microscopically.

Biochemical observations—

Blood.	Non-protein nitrogen	22·5–15·4 mg.	per 100 c.cm.
	Urea	17 –15·7 ,,	
	Cholesterol	122 and 120 ,,	
	Total protein	4·01 g.	
	Albumin	2·15 ,,	
	Globulin	1·58 ,,	
	Fibrinogen	0·28 ,,	

Urine.—No albumin; no abnormality.
Ascitic fluid.—No estimation of protein was made.

CASE 3.—Male, aged 36. In June, 1929, when doing full duty in police force, began to lose weight, occasional vomiting, poor appetite. January, 1930, admitted Guy's Hospital, occasional trace of albumin in urine, no œdema. August, 1930, œdema legs and scrotum, ascites, no albuminuria, occasional slight pyrexia, diagnosis? tuberculous peritonitis. August 14th, 1930, laparotomy, no peritonitis, ascites,

liver hard and cirrhotic; splenectomy; spleen normal in size and on section. September to October, 1930, recurrent ascites tapped on several occasions. Patient still under observation.

Biochemical observations—

Blood.	Albumin	3·44 g.	per 100 c.cm.
	Globulin	1·67 ,,	
	Fibrinogen	0·42 ,,	

Urine.—Except for an occasional trace of albumin no abnormality has been found.

Ascitic fluid.	Total protein	3·27 g. per cent.
	Albumin ..	1·63 ,, ,, ,,

CASE 4.—Female, aged 49. February, 1929, operation in a provincial hospital for perforated gastric ulcer. A large, probably malignant ulcer was found, a piece of omentum was sewn over the ulcer, and a gastro-enterostomy performed. She felt well after the operation for 12 months but then began to complain of anorexia and weakness. A week before admission she noted legs becoming œdematous. Œdema has increased, now present in abdominal wall, upper and lower limbs, and sacrum. Ascites present. There is a mass in abdomen occupying the greater part of the left upper quadrant. Occult blood in stools; extreme secondary anæmia; red cells, 1·3 to 2·3 million; Hb 12 per cent.; white cells, 16,000–20,000.

Biochemical observations—

Blood.	Non-protein nitrogen .	30 mg.	per 100 c.cm.
	Albumin	1·94 g.	
	Globulin	2·56 ,,	
	Sugar	114 mg.	

Urine.—No albumin; no abnormality.

CASE 5.—Male, aged 44. Pain for eight months in left hypochondrium. Acid eructations; distension; for six months has noticed that his abdomen gradually swelled up—two months ago noticed increasing œdema of both legs; vomiting appeared a month ago. No history of hæmatemesis; no melæna.

On admission—Heart normal; abdominal walls œdematous and distended by fluid; legs, thighs, and scrotum distended by œdema; abundant fluid in peritoneal cavity. Melæna for six days during his stay in the wards. X ray examination revealed an opacity on left side of abdomen. Spleen palpable three inches below ribs.

Blood count: Reds, 5,050,000; Hb. 79 per cent.; white cells, 4100; differential count normal; eosinophilia on one occasion.

August, 1930, tapped twice weekly, 18, 16, 5, 24 pints on various occasions.

October, 1930, laparotomy; spleen large, exhibiting infarcts; removed. Liver, marked cirrhosis; no evidence of carcinomatosis.

Death occurred a week later.

Autopsy: Small cirrhotic liver, no evidence of carcinomatosis. Kidneys normal, both macroscopically and microscopically.

Biochemical observations—

Blood.	Non-protein nitrogen ..	28–40 mg.	per 100 c.cm.
	Urea	28–54 ,,	
	Cholesterol	139–144 ,,	
	Albumin	1·8 0·9 1·0 g.	
	Globulin	2·6 5·2 4·9 ,,	
	Fibrinogen	0·3 ,,	
	Fouchet	Faintly positive.	
	Indirect van den Bergh	1·0 units bilirubin.	

Urine.—No albumin: no abnormality.

Ascitic fluid.	Albumin	4·7 g. per 100 c.cm.
	Globulin	3·0 ,, ,, ,,

(These concentrations of protein at the first tapping must be correlated with the enormous total quantity of ascitic fluid.)

CASE 6.—Male, aged 49. Attended hospital on August 19th, 1929, with two months' history of epigastric pain, and regurgitation of food one and a half hours after food, slightly relieved by taking food. Treated with alkalis. In October, 1929, developed marked œdema of legs without further symptoms. No explanation of œdema could be discovered; œdema persisted until January, 1930. Gastric symptoms recurred in May, 1930; X ray: large ulcer seen on posterior wall of stomach near the lesser curvature. This has disappeared under prolonged treatment; no recurrence of œdema.

Biochemical observations—

Blood (during œdema period).

Oct. 14th, 1929.			Dec. 30th, 1929.		
N.P.N. ..	38 mg.	per 100 c.cm.	N.P.N. ..	30 mg.	per 100 c.cm.
Urea ..	34 ,,		Urea ..	29 ,,	
Albumin ..	2·75 g.		Albumin ..	2·29 g.	
Globulin ..	1·83 ,,		Globulin ..	2·21 ,,	
Fibrinogen ..	0·26 ,,		Fibrinogen ..	0·52 ,,	
			Cholesterol ..	190 mg.	

Oct. 17th, 1930 (no œdema).

N.P.N. ..	41 mg.	per 100 c.cm.	Albumin ..	3·75 g.	per 100 c.cm.
Urea ..	45 ,,		Globulin ..	1·75 ,,	
Cholesterol .	197 ,,		Fibrinogen ..	0·28 ,,	

Urine.—No abnormality at any time.

Commentary.

The cases referred to above definitely support the theory that depletion of plasma proteins from any cause will lead to the production of œdema. Three of the patients had ascites with high protein content, in the others there was extensive ulceration of the stomach presumably leading to long-continued loss. Loss from the plasma of albumin, rather than of globulin, is known to be characteristic of œdema of the so-called "renal" type, and in this, as in many other respects, the cases described above presented striking similarities to the group often described as "nephrosis." Albuminuria, however, was absent and the blood cholesterol was within normal limits, whereas in nephrosis it is raised.

A recent experimental attempt to imitate the pathological condition occurring in nephrosis has been made by Barker and Kirk. These workers removed successive quantities of blood from dogs, centrifuging the corpuscles down, decanting the specimen, adding an equal quantity of saline, and then reinjecting the corpuscle-saline suspension. In due course the animals developed œdema and hypercholesteræmia, and this "plasmapheresis" was considered by these workers to be comparable to the plasma loss via the kidneys occurring in nephrosis. It is worthy of note that œdema did not appear until the albumin fraction of the plasma had been reduced to below 1 per cent. In the experience of the present authors and others, œdema often appears at a much higher plasma-protein concentration in human beings. Barker and Kirk state that after œdema had developed albumin appeared in the urine, and the kidney when sectioned later showed the characteristic tubal changes of nephrosis. From this they conclude that the kidney was damaged by a lowered plasma-protein content, and accept this as support for the theory that nephrosis is a disease of extrarenal origin.

We feel that the conditions in the cases quoted by us above are closely similar to the plasmapheresis in the dogs of these authors. The depletion of proteins in our cases, sometimes by passage into the peritoneum, sometimes by apparent leakage from ulcerating surfaces, was equal to that occurring in dogs, the duration was in all cases longer, and massive œdema was present in all. It is, therefore, important to note that in not one of these patients was there evidence of renal damage. The urine was free from albumin, casts, red blood-cells, or any abnormal constituent. In three of the cases death occurred, and at the autopsy the kidneys were found to be normal. In the others tests of renal efficiency, such as the urea-concentration and water elimination test, failed to demonstrate any renal lesion. Admitting that such tests are usually negative in early nephrosis, the post-mortem findings in three of the present cases, and the constant absence of proteinuria, may be taken as fairly conclusive evidence that the kidneys were normal in all. We must, therefore, assume that in the human subject the diminution of plasma proteins, even for a considerable time, does not produce changes in the kidney.

The importance of this in relationship to the ætiology of nephrosis is, we feel, very great. The "diabetes albuminuricus" theory ascribes the cause of nephrosis to a modification in the protein molecule rendering it permeable to the kidney, with the result that massive loss occurs in the urine. Œdema then results and the renal changes which occur have been thought to be due to the loss of plasma proteins. Unless it be argued that the mere passage of the abnormal protein through the kidney is capable of

producing renal lesions, it would appear that this argument falls to the ground, since extrarenal plasmapheresis in man does not damage the kidney. This forms a strong argument in favour of the view that the kidney is at least one of the primary seats of damage in nephrosis, and that the renal lesion causes the alteration in the constitution of the plasma proteins, and not vice versa.

SUMMARY.

Massive loss of protein may occur from the blood by routes other than the kidney. Œdema follows this loss, and the mechanism of its production is the same as that operating in nephrosis—i.e., diminution of the plasma proteins. In such cases no pathological changes are produced in the kidneys. This is definitely opposed to the theory that the renal lesions of nephrosis are secondary to plasma-protein depletion, and not vice versa.

We are indebted to Dr. V. Dickinson for permission to publish details of one case.

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CANCER OF THE SKIN.

A STATISTICAL NOTE.

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THERE is a tendency at the present time for observers to regard cancer, at least in its squamous form, as occupational in origin when it occurs in the skin of a manual worker. There is evidence to demonstrate the occurrence of skin cancer in tar workers and epithelioma of the scrotum in mule-spinners, but few statistics exist on the incidence of skin cancer of other parts of the body in various trades.

The statistics given here are compiled from the patients attending the Manchester and Salford Hospital for Skin Diseases, and to the honorary physicians of the hospital for their kindness in allowing me to publish these figures I tender my sincere gratitude.

Yearly Incidence.—The number of patients attending the skin hospital suffering from cancer of the skin increased from 114 in 1919 to 201 in 1929. The increase was most marked in cases of the squamous variety—namely, from 22 in 1919 to 67 in 1929—but a definite increase also occurred in the basal-celled type. The increase was not only in actual numbers but also in the percentage of the total number of patients attending the hospital who suffered from malignant disease.

TABLE I.

Year.	Patients.	Squamous-celled.	Basal-celled.	Year.	Patients.	Squamous-celled.	Basal-celled.
		%	%			%	%
1919	10,113	22 (0·22)	92 (0·91)	1925	9,489	32 (0·34)	126 (1·32)
1920	10,439	18 (0·17)	93 (0·89)	1926	9,502	47 (0·49)	117 (1·23)
1921	9,644	16 (0·17)	97 (1·00)	1927	9,903	39 (0·39)	115 (1·16)
1922	9,003	26 (0·29)	76 (0·84)	1928	10,267	50 (0·49)	137 (1·33)
1923	9,378	36 (0·38)	106 (1·10)	1929	10,466	67 (0·64)	134 (1·28)
1924	9,418	32 (0·34)	100 (1·06)				

It is difficult to determine how far these figures can be regarded as a true index of the incidence of the condition and how far the apparent increase is due to better and more careful diagnosis, as the result of which the patients are referred to hospital more frequently. The almost trebled number of patients suffering from the squamous-celled type, however, seems to suggest a true increase in its incidence (Table I.).

Until 1929 the cases were not recorded in detail, but since that date 57 cases of squamous and 175 of the basal type have been noted.

Squamous-celled Carcinoma.

In 14 out of 57 cases the tumour was superimposed on a previously existing lesion; in 11 cases this lesion was lupus vulgaris, while in the remaining 3 it was lupus erythematosus. All these patients had been treated by X ray radiations at some time previously, but in only two cases was there a history of an X ray burn. Our experience did not confirm the common statement that a wart is often present at the site of the tumour; in only one case was there reason to suspect that the injudicious application of caustics to a wart of some years' duration had initiated malignant change in it.

Sex- and Age-incidence.—Males were affected to a greater extent than females in the proportion of 3 to 2. The large number of patients below the age of 40 is accounted for by the number of carcinomata secondary to other lesions which occurred for the most part in early adult life. Apart from these, the largest number of cases in any five-year period occurred between the ages of 65 and 69 (Table II.).

TABLE II.

—	Total.	M.	F.	—	Total.	M.	F.
Below 40..	12	4	8	60–64..	5	5	0
40–44..	4	3	1	65–69..	10	7	3
45–49..	6	4	2	70–74..	4	3	1
50–54..	6	2	4	75–79..	2	1	1
55–59..	7	6	1	Over 80..	1	1	0

Occupational Incidence.—In histories of exposure to carcinogenic agents persons performing the same task give different answers. For instance, whereas one stripper and grinder in a mill stated that his clothes and whole body were saturated with oil; another man carrying out the same work said that his skin was never in contact with oil. How far this discrepancy may be due to better conditions obtaining in some mills or to different standards of personal cleanliness in the individual workers it is hard to determine. In examining these figures it must be remembered that they were obtained from hospital practice to the exclusion of the professional and business classes (Table III.).

TABLE III.—*Men.*

Tar workers	5	Railway guards	2	Flyer-maker	1
Carters	2	Mill-hands	6	Paper-maker	1
Labourers	6	Clerks	2	Engineers	3
Colliers	2	Bleacher	1		
Gardeners	3	Window-cleaners	2		

Five of these men had worked in a mill before their present employment, and 13 stated that their previous or present work necessitated the use of mineral oil or tar.

TABLE IIIA.—*Women.*

Housewives	15	Mill-hands	2	Box-maker	1
Hemstitcher	1	Clerk	1	Dyer	1

Six women had worked in a mill before their

marriage, and seven had used oil in the course of their various employments.

Situation of the Lesion.—Forty of the 57 cases had the lesion on the face, while of the four patients who had the tumour on the arm three were tar workers and the other a mule-spinner (Table IV.).

TABLE IV.

Face	..	..	.. 40	Limbs	..	..	.. 8
Ears	..	..	3	Finger	..	..	1
Lids	..	..	3	Arm	..	..	4
Cheek	..	..	26	Leg	..	..	1
Lips	..	..	4	Hand	..	..	2
Nose	..	..	4	Body	..	..	.. 1
Neck	..	..	.. 2	Scrotum	..	..	.. 6

Basal-celled Carcinoma.

Sex- and Age-incidence.—In this type the women predominated, there being 102 women to 73 men. The greatest number of cases occurred between the ages of 60 and 64, showing a maximum age-incidence in the five-year period preceding the maximum for the squamous type. The incidence for male and female ran approximately parallel (Table V.).

TABLE V.

—	Total.	M.	F.	—	Total.	M.	F.
Below 30..	5	3	2	55–59..	26	11	15
30–34..	4	2	2	60–64..	34	16	18
35–39..	12	5	7	65–69..	17	6	11
40–44..	14	1	13	70–74..	12	8	4
45–49..	13	4	9	75–79..	5	0	5
50–54..	30	14	16	Over 80..	3	3	0

The *occupational incidence* was as follows :—

TABLE VI.—*Females.*

Housewives	.. 90	School-teacher	. 1	Baker	 1
Mill-hands	.. 7	Shop assistants	. 2	Tailoress	.. 1

In addition to the seven mill-hands in Table VI., 42 women had at some time worked in a mill. Twenty-eight stated that their work required the handling of oil, although in most cases direct contact of the oil with the skin was only very occasional.

TABLE VIA.—*Males.*

Shop assistant	. 1	Bleachers	.. 3	Printers..	.. 2
Engineers	.. 9	Stone-mason	.. 1	Window-cleaner	1
Mill-hands	.. 11	Gardeners	.. 3	Painter ..	.. 1
Packer ..	1	Clerks ..	.. 6	Sailor ..	.. 1
Labourers	.. 14	Porters ..	.. 2	Retired ..	.. 6
Publicans	.. 2	Moulder	.. 1		
Colliers..	.. 6	Bricklayers	.. 2		

Of the men, 18 had worked in a mill at some time previous to their present employment, and 25 had used oil in the course of their past or present work.

The *situation of the lesion* is shown in Table VII.

TABLE VII.—*Women.*

Face	..	..	.. 97	Face (*cont.*)—			
Chin	..	..	4	Inner canthus		7	
Forehead	..	..	10	Lower lid	..	6	
Cheek	..	..	16	Lip	.. ..	5	
Temple	..	..	12	Neck	.. ..	..	3
Nose	..	..	36	Abdominal wall	..	..	2
Ear	..	..	1				

TABLE VIIA.—*Men.*

Face	..	..	.. 66	Face (*cont.*)—			
Cheek	..	..	14	Temple	..	9	
Forehead	..	..	5	Pre-auricular	..	3	
Inner canthus	..		6	Neck	.. ..	..	2
Lip	..	..	2	Abdominal wall	..	..	3
Nose	..	..	23	Limbs	.. ..	..	2
Lid	..	..	3	Elbow	.. ..	1	
Ear	..	..	1	Arm	.. ..	1	

From these figures it will be seen that by far the most common situation of both forms of cancer of the skin is the face. This fact, in our opinion, is against an occupational cause, since the face is the part of the body least likely to be brought into contact with irritating substances used in any occupation.

THE DICK TEST IN PREGNANCY AND ITS RELATION TO PUERPERAL SEPSIS.

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THE Dick test was performed on 600 pregnant women, of whom 22 per cent. reacted positively, the incidence and intensity of positive reactions being greater in primiparæ, irrespective of age, than in multiparæ. Among multiparæ the proportion of strongly positive reactors decreased with increasing age; so also did the incidence of puerperal sepsis, whereas both remained constant for all ages in primiparæ. A correlation between a positive Dick test and susceptibility to puerperal sepsis was thus suggested, but was not supported by further analysis.

Previous streptococcal infection—scarlet fever, tonsillitis, puerperal sepsis—did not appear to influence the reaction to the Dick test. On the other hand, the reaction became negative when Dick-positive patients who had puerperal sepsis, however slight, were retested immediately after the pyrexia subsided.

The puerperia of 500 women in the series were investigated. When all cases of puerperal pyrexia, whether notifiable or not, were divided into puerperal sepsis and pyrexia due to other causes, the analysis showed that women who reacted positively to the Dick test were not more liable to develop puerperal sepsis than were negative reactors. However, infection when it occurred tended to be more severe in the Dick-positive than in the Dick-negative cases. An investigation of the factors predisposing to puerperal sepsis showed that sepsis was much more frequently associated with a difficult or mismanaged labour and/or a poor condition of health than with a positive reaction to the Dick test.

SCOPE OF THE WORK.

During the year 1929 an investigation was conducted at the Royal Maternity and Women's Hospital, Glasgow, into the value of the Dick test—i.e., the cutaneous reaction to the intradermal injection of scarlatinal streptococcus toxin—as an index of susceptibility to puerperal sepsis. Because of the commonly expressed view that the toxins produced by the hæmolytic streptococci causing scarlatina and puerperal fever are identical, it was thought that sensitiveness to the scarlatinal toxin might indicate susceptibility to puerperal sepsis, and, if this were so, that the Dick test might serve as a guide for the prophylactic immunisation of susceptible cases.

The Dick test was performed in a series of 600 pregnant women, either during labour or in the last few weeks of pregnancy. Careful histories were taken on cards specially designed for the investigation, inquiry being made regarding previous streptococcal infection—e.g., scarlet fever, tonsillitis, puerperal sepsis—the obstetric history, and the health during the current pregnancy. Full particulars of the labour and the puerperium were subsequently obtained in 500 cases; a morbid puerperium, even although not notifiable according to the British Medical Association standard, was classed as puerperal sepsis if there was clinical evidence of local

uterine sepsis. Pyrexia due to other causes, such as urinary infection, bronchitis, or operation, was separately classified. A number of Dick-positive reactors who developed pyrexia in the puerperium were retested immediately after the pyrexial period to see if any change in the reaction had occurred. Some of these were again tested six months later.

Method.—The toxin used was the standardised product in use for the Dick test in scarlet fever and was kindly supplied by Dr. R. A. O'Brien, of the Wellcome Physiological Research Laboratories. Initially, two different dilutions of toxin were used, 1/250 and 1/1000, 0·2 c.cm. of each being injected intradermally on the flexor aspect of the left forearm about three inches apart. On the other arm an injection of 0·2 c.cm. of heated toxin served as a control. A positive result was indicated by an area of redness, at least 10 mm. in diameter, appearing within 30 hours, and in the subsequent analysis one plus represents 10–20 mm., two plus 20–30 mm., and so on. In order to determine the optimum dilution of toxin an analysis was made of the first 200 cases in whom the two strengths of toxin, 1/250 and 1/1000, were used. Of these only 16 (8 per cent.) were positive with 1/1000 dilution, whereas 43 (21·5 per cent.) were positive with 1/250 dilution. In all cases where the 1/250 dilution gave a reaction over two plus there was a positive reaction with the 1/1000 dilution, but to a smaller extent. The analyses which follow have, therefore, been based on the results obtained with the stronger dilution of toxin for two reasons: (1) too small a proportion of the women gave a positive reaction with the weaker dilution, and (2) the extent of the reaction with the stronger dilution (1/250) was a measure of the degree of susceptibility to streptococcus toxin.

RELATION OF DICK TEST TO AGE AND PARITY.

Of the 600 cases tested, 135 (22·5 per cent.) gave positive reactions; 44 (25 per cent.) of 179 primiparæ and 91 (21·5 per cent.) of 421 multiparæ. A division of the cases into three age-groups, 15–25, 26–35, and 36–45, showed that the incidence of Dick-positive reactions did not decrease with advancing years either in primiparæ or multiparæ. The impression was formed, while doing the tests, that more marked reactions were obtained in primiparæ than in multiparæ. Consequently the Dick-positive cases were divided into two groups according to the intensity of the reaction: (*a*) those of 1–2 plus and (*b*) those of 3 plus or over. It was found that 39 per cent. of the primiparæ and only 17 per cent. of the multiparæ gave a reaction of 3 plus or over. Primiparæ, however, belong mostly to the youngest age-group, and a more detailed analysis was made to find whether age or parity was the more important factor in determining the intensity of the reaction. In the last column of Table I. it is seen that in multiparæ the percentage of strong reactors diminished steadily from the youngest to the oldest age-group, whereas the primiparæ showed no fall in the percentage of strong reactors in the older age-group. This suggests that the decrease in sensitiveness which occurs with advancing years is due to increased parity rather than to greater age.

If susceptibility to scarlatinal streptococcus toxin is an indication of susceptibility to puerperal sepsis, the preceding analysis would suggest that the incidence of sepsis should be greater in primiparæ than in multiparæ. When 225 patients, in whom the health was good and the delivery normal, were analysed it was found that the sepsis rate in primiparæ was high (26 per cent.),* and was the same for the first two age-groups, whereas in multiparæ it was 11, 7, and 6 per cent. in the first, second, and third age-groups respectively. Of course, in primiparæ spontaneous deliveries which are recorded as being free from lacerations will be accompanied by more unnoticed bruising than spontaneous deliveries in multiparæ, which fact in itself might tend to increase the sepsis rate among primiparæ. However, the correspondence between these figures and those recorded from the previous analysis of the intensity of the reaction to the Dick test (Table I.) might suggest that there exists some relationship between a marked degree of sensitiveness to the streptococcus toxin and a liability to puerperal sepsis. But an analysis of the puerperia of 25 women in whom the Dick reaction was three plus or over showed that there was no sepsis in 17 in whom the health was good and the delivery normal, and no sepsis in seven others where there were predisposing factors, either ill-health or difficult delivery, while one woman who died—probably of sepsis—had both ill-health and a difficult delivery. Thus there was no evidence from this small number of cases that a high degree of sensitivity to the Dick toxin indicates a similar degree of susceptibility to puerperal sepsis.

* This high figure is explained by the fact that even the slightest degrees of sepsis are included.

TABLE I.—*Incidence and Intensity of Dick Reaction in Primiparæ and Multiparæ in Various Age-groups.*

Age-groups.	Primip.	1 and 2 +	3 + or over.	Multip.	1 and 2 +	3 + or over.
		%	%		%	%
15–25	108	13 (12)	11 (10·2)	89	8 (9)	6 (6·6)
26–35	64	11 (17·5)	7 (10·9)	236	52 (22)	7 (3)
36–45	7	2	0	96	16 (16·6)	2 (2)
—	179	—	—	421	—	—

RELATION OF DICK TEST TO PREVIOUS STREPTOCOCCAL INFECTION.

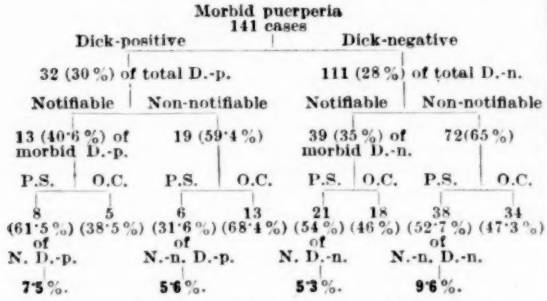
Susceptibility to scarlatinal streptococcus toxin does not appear to be influenced by previous streptococcal infection, if the histories obtainable from this class of patient be accepted. The percentage of positive reactors was the same in patients giving a history of scarlet fever or repeated attacks of tonsillitis as in those who gave no such history: 23 per cent. in the former group and 22 per cent. in the latter. Histories of undoubted puerperal sepsis were obtained in 26 cases, of whom 5 (19 per cent.) were Dick positive. Of course, only the more severe puerperal infections would be recognised as such by the patients. The puerperia of 23 of these cases were observed and only one woman developed puerperal sepsis. These figures are insufficient to decide whether or not a previous puerperal infection protects a woman against subsequent puerperal sepsis.

Dick Test in Relation to Puerperal Sepsis.

Of the 500 cases followed throughout the puerperium the Dick test was positive in 21 per cent.; of these, 12·2 per cent. had puerperal sepsis, according to the British Medical Association standard, compared with 9·4 per cent. of the negative reactors. It was thought advisable to make a further analysis of all cases of sepsis, whether notifiable or not, as puerperal sepsis may occur with very little temperature—e.g., local uterine sepsis, white leg, and low-grade pelvic cellulitis. This analysis (Table II.) showed first that almost as big a proportion of Dick-negative as Dick-positive cases had morbid puerperia. The next subdivision into notifiable and non-notifiable pyrexia showed that the percentage of notifiable cases is slightly higher in the Dick-positive than in the Dick-negative group. Some of the notifiable puerperal pyrexias, however, were due to such causes as urinary infection, bronchitis, and staphylococcal breast abscess, so that a further subdivision

was made in each group into true puerperal sepsis and pyrexia due to other causes. The cases of true puerperal sepsis have been expressed as percentages of the total Dick-positive and Dick-negative cases (see figures at the foot of Table II.); 8 (7·5 per cent.)

TABLE II.—*Analysis of the Morbid Cases.*



D.-p. = Dick-positive cases; D.-n. = Dick-negative.
N. = Notifiable; N.-n. = Non-notifiable.
P.S. = Puerperal sepsis. O.C. = Other causes.

of the 106 Dick-positive cases developed notifiable puerperal sepsis, and 6 (5·6 per cent.) developed non-notifiable puerperal sepsis—a total of 13·1 per cent.; 21 (5·3 per cent.) of 394 Dick-negative cases developed notifiable puerperal sepsis, and 38 (9·6 per cent.) developed non-notifiable puerperal sepsis—a total of 14·9 per cent. Since statistically there is no significant difference between these figures, it would seem that pregnant women who react positively to the Dick test are no more liable to puerperal sepsis than are negative reactors.

The figures resulting from the division into notifiable and non-notifiable puerperal sepsis suggested that if infection occurs it tends to be more severe in the Dick-positive cases. A more detailed analysis of the cases of notifiable puerperal sepsis in both Dick-positive and Dick-negative groups rather supported that view (Table III.); 3 out of 8 Dick-positive cases died of puerperal sepsis compared with 4 out of 21 Dick-negative cases, one of the latter deaths being due to peritonitis caused by leakage from an infected fibroid. Six cases of puerperal septicæmia recovered; of these 2 were Dick-positive and 4 were Dick negative. Again, 7 out of 8 (or 87 per cent.) of the Dick-positive notifiable cases were suffering from severe sepsis as compared with 10 out of 21 (or 47 per cent.) of the Dick-negative notifiable cases (Table III.). In this small series

TABLE III.—*Details of Patients who Developed Notifiable Puerperal Sepsis.*

Dick-positive cases (8).			**Dick-negative cases (*cont.*)**		
Acute sepsis with peritonitis, death	3		Infection of fibroid, death	1	
Septicæmia, recovered	2		Septicæmia, severe, recovered	4	
Parametritis	2	7	Parametritis, recovered	2	10
Severe local sepsis	1		White leg	1	
Dick-negative cases (21).			Abdominal abscess after C.S.	1	
Acute sepsis with peritonitis, death	2		Local sepsis	9	11
Cellulitis, embolism, death	1				

factors such as poor health of the patient and a difficult delivery, which predispose to sepsis, would affect the figures. On analysis these factors were found to be approximately equal in both Dick-positive and Dick-negative groups, and could therefore be ignored.

REACTION TO DICK TEST AFTER PUERPERAL SEPSIS.

Twenty-one women who had given a positive reaction to the Dick test were retested in the puerperium; 13 of them remained positive, and of these two had puerperal pyrexia due to a coliform pyuria. In the remaining eight cases there was sepsis, slight in six and severe in two, and in all of them the reaction to the Dick test became negative. An attempt was made to retest all these patients six months later, but unfortunately only three of those who had become Dick negative in the puerperium could be traced. One was again Dick positive; the other two remained Dick negative. All the women who had been Dick positive before and after delivery still reacted positively.

PUERPERAL MORBIDITY IN RELATION TO ILL-HEALTH AND DIFFICULT LABOUR.

The relative importance as factors in the production of puerperal sepsis of the reaction to the Dick test, the general health of the patient, and the type of delivery is indicated in Table IV. The figures

TABLE IV.—*Relative Importance of Reaction to Dick Test, Bad General Health, and Difficult Delivery in Puerperal Sepsis.*

Factors present.	Dick positive.	Dick negative.
Good health and normal delivery.	Afebrile .. 47 Febrile .. 6 (11·3 %)	Afebrile .. 237 Febrile .. 22 (8·5 %)
Bad health only.	Afebrile .. 11 Febrile .. 2 (15·4 %)	Afebrile .. 24 Febrile .. 9 (27·5 %)
Difficult delivery only.	Afebrile .. 23 Febrile .. 8 (34·7 %)	Afebrile .. 37 Febrile .. 43 (54 %)
Bad health and difficult delivery.	Afebrile .. 2 Febrile .. 7 (77 %)	Afebrile .. 7 Febrile .. 17 (70 %)

emphasise the fact that a difficult delivery was the most important single factor and bad general health the next; when both these factors were present 70 per cent. of the women had morbid puerperia. A positive reaction to the Dick test was the least important factor predisposing to sepsis. This was emphasised by the finding that if, from the 500 cases with a notifiable sepsis rate of 12·8 per cent., those women with good health and normal delivery (225 cases) were abstracted, only 4 (1·7 per cent.) of the latter had notifiable sepsis and all four had perineal tears requiring several silkworm sutures; two of them were Dick positive and two Dick negative. The rate of notifiable sepsis for the remainder of the 500 cases was 22 per cent.

Discussion.

Since this investigation was commenced several papers have appeared on the subject. Burt-White, Colebrook, and others (1930) gave the results of 1000 cases investigated at the London Maternity and Queen Charlotte's Hospitals. They suggested that women with a Dick-positive reaction have an increased susceptibility to puerperal sepsis, since the morbidity among Dick-positive cases was 41 per cent. greater than in the Dick-negative group. In our investigation there was very little difference between the respective morbidity-rates of the Dick-positive and Dick-negative groups. In their series cervical swabs were taken in morbid cases but in

only 8 was the *S. pyogenes* isolated: in 2 out of 770 Dick-negative cases (0·26 per cent.) and in 6 out of 230 Dick-positive cases (2·6 per cent.). The authors therefore state that the incidence of *S. pyogenes* infection in the puerperium is ten times greater in Dick-positive than in Dick-negative cases. However, the fact that hæmolytic streptococci were not isolated from cervical swabs does not prove conclusively that the streptococcus was not the infecting organism. For example, in our series the Dick reaction became negative when Dick-positive patients who had sepsis, however slight, were retested after the pyrexia subsided, but it remained positive in those who had a coliform urinary infection. The incidence, in Burt-White and Colebrook's series, of only one case in which a few colonies of *S. pyogenes* were isolated out of 38 Dick-negative cases with morbid puerperia is at variance with our findings, where 10 out of 21 Dick-negative cases (47 per cent.) with notifiable puerperal sepsis had a type of infection so severe as almost certainly to be due to the hæmolytic streptococcus.

Salmond and Turner (Royal Free Hospital) and Stent (St. Mary's Hospital, Manchester) have also recorded their results obtained in two series of 533 and 500 pregnant women respectively. In neither investigation was there significant evidence to support the view that a positive reaction to scarlatinal toxin is an index of susceptibility to puerperal sepsis. Stent, who divided her morbid cases into three grades of severity, found a higher incidence of severe sepsis in the Dick-positive than in the Dick-negative group: 4 out of 14 as compared with 5 out of 46. Although these figures were not emphasised by the author on account of the small numbers, they correspond with our results, which show that, out of eight Dick-positive cases with notifiable puerperal sepsis, seven (87 per cent.) had severe infections, whereas only 10 out of 21 (47 per cent.) of the similar Dick-negative group had severe sepsis. Theoretical considerations would suggest that these findings may have some significance. Streptococcal antitoxic immunity does not prevent the invasive action of the *S. pyogenes*, as is shown by the occurrence of streptococcal tonsillitis in individuals artificially immunised to streptococcal toxin, but the immunity might be expected to modify the severity of the infection—as in fact it does, for these immunised individuals do not develop scarlet fever. We therefore suggest that, although a negative reaction to the Dick test in a parturient woman does not indicate an insusceptibility to streptococcal infection in the puerperium, it reveals an antitoxic immunity of a degree which may modify the severity of infection and help to localise it should it occur.

PROPHYLAXIS.

It follows that puerperal sepsis may be wholly prevented only if women are protected against the hæmolytic streptococcus itself. Unfortunately the tissues seem to be unable to establish an efficient or permanent barrier against the invasive action of the streptococcus—witness, for example, the recurrences of erysipelas and streptococcal tonsillitis. Thus, a system of immunisation with streptococcal vaccines would probably afford inadequate protection, although Lash (1929) claimed to have reduced the incidence of puerperal sepsis in a series of women who were given a vaccine containing streptococcal toxin plus the killed organism. In our series multiparæ tended to give less intense reactions to the Dick toxin and appeared also to be less susceptible than primiparæ to puerperal infection, facts which might possibly be attributed to a combination of antitoxic immunity plus antibacterial immunity conferred by infection in previous confinements, but was probably due to other causes.

If antistreptococcal immunity cannot be obtained the prophylaxis of puerperal sepsis may be attempted either by preventing access of the hæmolytic streptococcus to the parturient woman or, if that fail, by rendering conditions unsuitable for the proliferation of the streptococci in the woman's tissues. The former of these measures is concerned with the source of the infecting organism, and, whether the hæmolytic streptococcus is derived from the throat of an attendant—and the throat is its natural habitat—or by contagion from another case of puerperal infection, the strictest régime of asepsis during childbirth and the puerperium will not always prevent its access to the genital canal. The second method of prophylaxis—to increase the resistance of the woman—becomes correspondingly important and essential.

It has been shown in the present investigation that a difficult or mismanaged confinement, together with a poor condition of health, greatly increases the woman's susceptibility to puerperal infection. We are entirely in agreement with Young's dictum: "To trauma from interference must be credited the chief agent in the maintenance of sepsis." The obvious remedies are more thorough antenatal care and a better obstetric service. Until this ideal is attained some means of protecting "suspect" cases is desirable. Of course, sepsis may occasionally occur in the absence of predisposing factors. Scarlatinal streptococcus antitoxin has been used successfully in the prophylaxis of scarlet fever; we would accordingly suggest its use in doses of 5–10 c.cm. at the confinement of women who for various reasons are to be regarded as "suspect" cases. In a series of women thus treated (Thomson, Bellshill Hospital—personal communication) the incidence of puerperal infection has been reduced by half. It is to be hoped, however, that if there is an antigenic identity among the strains of puerperal streptococci an antibacterial serum may be produced for prophylactic use against the invasive action of the hæmolytic streptococcus.

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DERBYSHIRE HOSPITALS: INCREASED ACCOMMODATION.—The Derbyshire County Mental Hospital at Mickleover has been enlarged by the addition of 12 houses for medical attendants, a nurses' home, and an admission hospital. The work has cost over £92,000. The nurses' home provides 71 bedrooms and other accommodation. The admission hospital will contain 50 patients on each side, in dormitories and single rooms, and there is a very complete bathing installation.—The employees of Rolls-Royce, Ltd., at a cost of £1000, have endowed a bed in Derby Infirmary. They have in contemplation the provision of a second bed as well as one in the children's hospital. Since 1914 the employees have subscribed £8000 to the infirmary, which during the past year has treated 223 in-patients and 1087 out-patients from the Rolls-Royce Co. at a cost of £1834.—Reviewing the hospital accommodation of Derbyshire, Dr. W. M. Ash, the county medical officer, states that there is much overlapping, and that there are too many instances of a small centre of population possessing two and three, and sometimes more, institutions for the sick, each confining its activities to one type of case or one class of person. "As a general policy," he adds, "there should be one hospital for any area, and the work of that hospital should be as comprehensive as medical and other circumstances permit," and he suggests that the county council should not support small institutions which fall behind in the march of medical progress.

CLINICAL AND LABORATORY NOTES

A CASE OF MEGACOLON

OF MANY YEARS' DURATION WITH UNUSUAL ATTACKS OF PAROXYSMAL TACHYCARDIA.

By H. J. Starling, M.D. Lond.,

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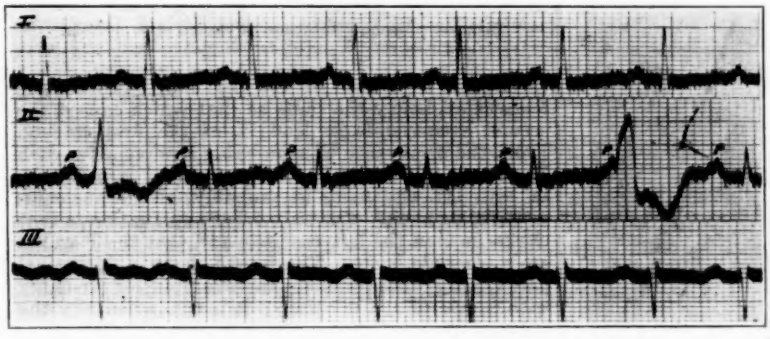
THE essential lesion of the colon described in this case was a volvulus of the sigmoid flexure which had never become so complete as actually to occlude the lumen of the bowel. Gould's "Medical Dictionary" defines volvulus (volvere, to roll) as "a twisting of the bowel upon itself so as to occlude the lumen. . . ."

The patient was first seen by me in April, 1925; she was then 48 years old. She had been delicate all her life and had suffered from constipation and sickness, especially in childhood. Her present trouble began at 24 years when she saw a consultant for constipation and "nerves"; no cardiac abnormality was noted then. A few years later she had severe gastritis and the heart was said to be irregular and intermittent; she rested for five years, with some improvement. At 31 she had a curious heart attack, said by one doctor to be functional but by another to be serious, and she was continually in bed after this. In 1914 she saw a London consultant who diagnosed a congenital heart lesion.

When I saw her first she had been confined either to her room or to her bed for ten years. She was lying on a couch but, even so, showed slight dyspnœa. There was some pallor of the face, the general nutrition was good, and the teeth were sound, but there was marked pyorrhœa of the gums. The heart was slightly enlarged, there were no bruits, the sounds were tic-tac, the pulse-rate was 150 to 160, and the blood pressure 150/110. On standing up for some minutes the toes, then the feet, and then the legs became at first congested, then a deep red, then definitely cyanosed. This congestion gradually increased until at the end of ten minutes the upper part of the thighs was a deep red, and the colour increased downwards to a deep purple. The patient informed me that if she stood for much longer the congestion extended up as high as the upper part of the chest, when she would also have marked œdema of the left leg and slight œdema of the left hand and right leg. The abdomen was not distended but the percussion note all over was hyper-resonant.

Electrocardiogram 1.

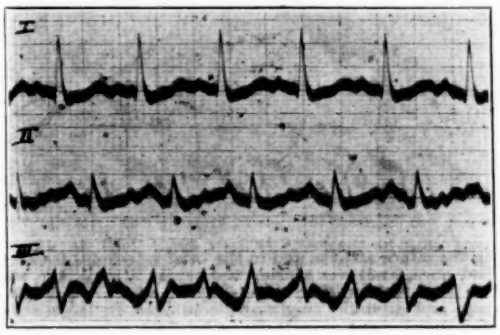


She was only having two motions a week and these only with the aid of suppositories.

In July, 1925, she was brought to a nursing-home and the first electrocardiogram was taken. This shows a left ventricular preponderance, T 3 inverted, and two extrasystoles in lead II. Whilst in the nursing home it became evident that there was something seriously wrong with the intestinal tract; very large enemata failed to secure any result, and the motions suggested that the intestinal contents were being held up in some part of the tract. X ray examinations were then made by Dr. J. S. Levack of Norwich.

The stomach appeared as an elongated organ extending from the left side to the extreme right of the abdomen; it was situated high up, under the costal margin, and curved over a huge distended coil of intestine. The passage of the barium meal was not unduly delayed and in five hours it had reached the cæcum. In 24 hours the barium was seen passing up the ascending colon into the transverse and

Electrocardiogram 2.



descending parts, which also were situated above and around the aforementioned distended coils, but it did not reach the rectum until the end of 48 hours. A barium enema was then given, but the ordinary quantities failed to reach the ascending colon, and not until ten pints had been administered was this part of the colon filled. These distended coils were seen in all the films, but the barium was not observed to pass in or out of them at any time.

On these findings a diagnosis was made of incomplete volvulus of the sigmoid flexure. The patient was seen by Sir Hamilton Ballance, who advised an exploratory laparotomy with a view to resection of the volvulus if this was found to be feasible, but the patient refused to undergo any operative procedure.

As the result of treatment by colonic lavage, massage, liquid paraffin preparations, and dental extractions, the condition of the patient was greatly improved; she was able to be up and about to a limited extent, there was only slight œdema of the legs after being up for some hours, and only slight discoloration of the legs after standing still for ten minutes; there was a loose action of the bowels either daily or every other day.

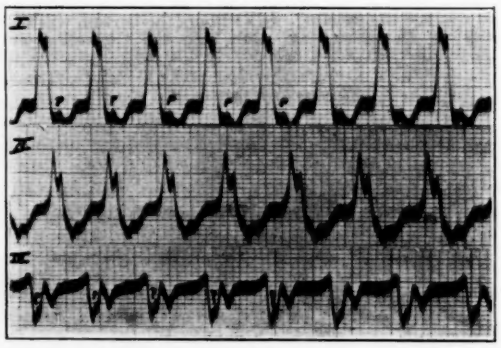
It was remarkable that at no time did the contour of the abdomen suggest any undue distension. Palpation sometimes revealed a certain degree of tension, and the percussion note was always tympanitic, especially in the upper part of the abdomen and the lower half of the chest. This suggested that the pressure of the distended guts was exerted in a vertical rather than in an anteroposterior plane.

The patient returned home in October and led a comparatively active life until March, 1926, when she began to have curious fainting attacks and periods of irregular tachycardia. She came into the nursing-home again in May, 1927. She described very vividly three different types of heart attacks. The first type she called "barge-poling"; during this phase the pulse was extremely irregular, the whole chest heaving with the violence of the heart's action, and the rate varying between 140 and 170. The next type was described as "quick-beating," at a rate of 195. The third type was known as "hitching," and very aptly so. The first type was the most uncomfortable, but was brief and transitory, leading to type 2, during which she was able to be up and about, write letters, and do other work at a slow pace, or to type 3, during which she had to rest. The second type was the most prolonged and sometimes lasted

as long as 24 hours. The three types are represented in electrocardiograms 2, 3, and 4.

During the next three years these attacks of tachycardia slowly but surely increased in frequency, duration, and severity. In spite of them the patient kept up and about

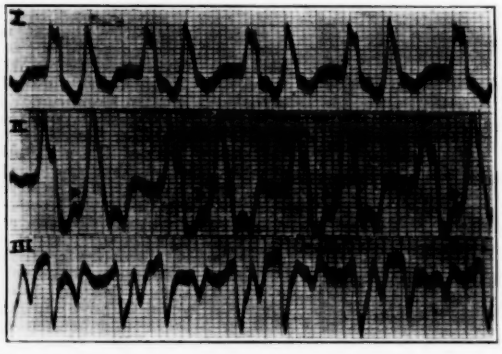
Electrocardiogram 3.



during the minor attacks and in the brief interludes between the bad ones, and even during the severe attacks she was able to do much writing, resting on a couch. Quinidine sulphate and digitalis, singly and combined, in large doses and for many days at a time, failed to bring any relief, but the French tinct. iodi, taken in milk in ten-minim doses thrice daily for a month at a time, proved to be of great value. The bowels were relieved by enemata, but as time went on the amount of fluid had to be increased to 5 pints or more before they were effectual. During her last stay in the nursing-home in November, 1929, during the course of her daily massage, she had a severe fainting attack followed by general convulsions and loss of consciousness for some hours, due probably to a cerebral embolus. In the early part of 1930 the attacks of tachycardia were almost continuous, and early one morning in April she was found to have died quietly about one hour after she had been seen to be sleeping peacefully. A partial post-mortem was allowed.

On opening the abdomen and thorax the following disposition of the viscera was observed (see Diagram). A double loop or volvulus occupied the greater part of the abdomen, the distal part arising from the sigmoid flexure and the proximal part ending close to the distal end, in the lower part of the ascending colon. The descending and transverse parts of the colon were twice

Electrocardiogram 4.



(and in parts three times) the normal size and the latter was lying high up under the costal margin. Above this again was seen the stomach, the major portion of which was on the left side at the level of the fifth to the seventh ribs, but the duodenal portion was enormously elongated, stretching across to the right seventh rib in the mid-clavicular line. The upper limit of the diaphragm on the right side was at the third rib, the liver occupying the space below this, and on the left side was at the fifth rib. The heart was slightly larger than normal, the muscle appeared to have a good colour and consistency, and the valves were normal.

From the close conjunction of the distal and proximal ends of the volvulus it would appear that the operation for its removal, as suggested in 1925, would have been comparatively safe and probably effectual, especially since the volvulus was remarkably free from adhesions to surrounding structures.

The electrocardiograms are of unusual types. The first, taken in 1925, shows a normal sinus rhythm and left ventricular preponderance. In lead II. are two extrasystoles, each of a different type and both occurring after a normal P-wave, thus replacing the usual ventricular sequence. In the second, leads I. and II. show a normal sinus rhythm of 135–140 per min., but lead III. shows an anomalous paroxysmal tachycardia of a rate of 217 per min. The third, taken in 1927 during an attack of paroxysmal tachy-

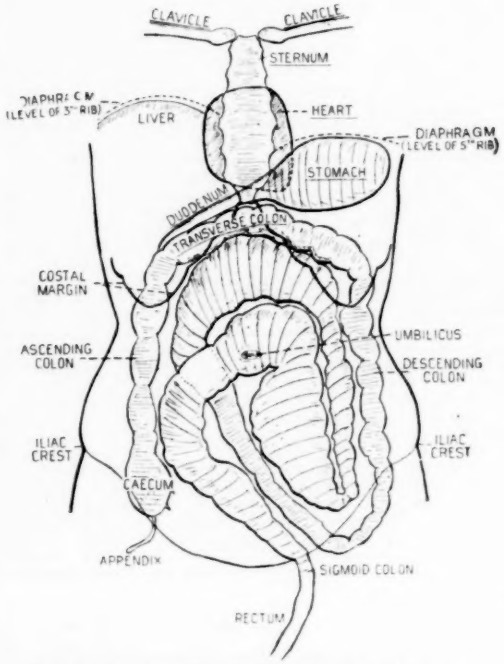


Diagram showing disposition of viscera post mortem.

cardia, shows a rate of 195 per min. The ectopic focus is evidently the same as that which caused the second extrasystole in lead II. of the first tracing. From the occurrence of a probable P-wave after each R-wave in lead I. and in the up-stroke of each S-wave in lead III. the focus is probably in the auriculo-ventricular node. The only other explanation is that the focus is in the left ventricle and that the P-waves are retrograde beats. The fourth shows a bigeminal paroxysmal tachycardia, an example of re-entry with a rate of 195 per min.; it is fundamentally the same as the preceding type, but each alternate beat is replaced by an extrasystole arising from a different focus, probably the same as that which caused the first extrasystole in lead II. of the first electrocardiogram.

These types persisted until the last records taken in 1929. The only type not recorded was one described as a "slow hitch," during which the pulse-rate was 60 to 80; the patient was completely incapacitated, and the venous polygraphic record suggested a flutter at a very high rate.

HERPES ZOSTER OF THE FIFTH LUMBAR NERVE.

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The following case, seen in consultation with Mr. A. de V. Blathwayt on August 14th, seems worthy of record. It was that of a lady, aged 74, suffering from typical herpes zoster, evidently resulting from inflammation of the fifth lumbar nerve root ganglion on the right side. The distribution of vesicles was as follows. They covered the dorsum of the foot and of the first three toes, and the inner half of the fourth toe; vesicles were also present on the ventral aspect of the first three toes. In addition, they occupied the whole of the outer surface of the leg below the knee, two particularly prominent collections

Photograph of buttock and thigh, showing lesions.

being present in the neighbourhood of the head of the fibula. But what is of peculiar interest is the fact that in the very centre of the posterior aspect of the thigh, midway between the fold of the buttock and that of the knee, was situated an oval patch of vesicles measuring 2½ in. from above downwards, and about 1¼ in. from side to side: higher up again was another similar but larger patch commencing 1 in. above the termination of the internatal cleft and extending downwards and outwards, across the buttock, for some 6 in. and being about 2¼ in. in breadth.

The importance of this case consists in the light it throws on the sensory distribution of the fifth lumbar nerve, since it is extremely improbable that more than one nerve root was involved.

Most authorities deny any sensory distribution to the fifth lumbar nerve root above the knee, and this has been a great obstacle to complete acceptance of Prof. J. A. Sicard's view that one of the chief causes of sciatica is irritation of the fifth lumbar nerve during its passage through the intervertebral canal (funiculitis), or of Prof. V. Putti's that sciatica is symptomatic of inflammation of the joints between the articular processes of the lumbar vertebræ and between the fifth lumbar vertebra and sacrum. Neither of these theories satisfactorily accounts for the pain in the back of the thigh, usually the most prominent symptom in sciatica, if innervation of this part is from the second sacral nerve only, as the text-books would have us believe. But if (as this case suggests) the fifth lumbar nerve in some persons, and perhaps in many, reaches the surface in this region, to however small an extent, one great difficulty in accepting the explanations of these distinguished observers is removed. Probably herpes zoster is a more trustworthy guide to sensory distribution than information gleaned from sensory loss. Especially would this be so in the case of a small area such as that found on the back of this patient's thigh, since there might be considerable overlapping by other sensory roots.

It is of interest that this patient had had an attack of sciatica in the opposite (left) limb 12 years ago, which lasted three months.

SPIROCHÆTES IN THE FÆCES

OF PATIENTS WITH BLACKWATER FEVER.

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The most striking feature in the symptomatology of blackwater fever is the predominance of the biliary symptoms—namely, bilious vomiting, icteric colouring of the skin, and bilious fæces. This fact led me when trying to find clues to the ætiology of this fever to examine the bile.

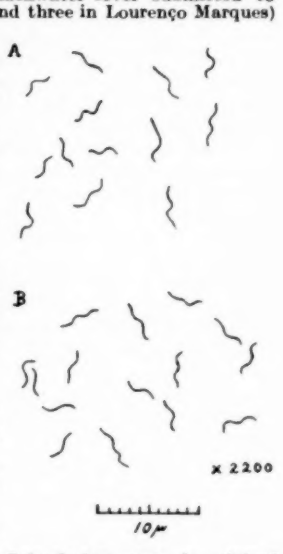
In December, 1928, in Tete, Portuguese East Africa, I made an examination on a patient who had died six hours previously with a severe attack of this disease; the gall-bladder was punctured aseptically, and I aspirated some bile with a syringe. Films were made from this bile, dried, fixed by heat and stained with carbol-fuchsin. They showed innumerable spirochætes. In all patients suffering from this disease whom I had the opportunity of seeing during the next three months, I looked for the parasites in the blood, urine, and fæces with the following results:—

(*a*) In all the cases of blackwater fever submitted to investigation (four in Tete and three in Lourenço Marques) I found spirochætes in the fæces. The parasites were abundant during the feverish stage of the disease but began to diminish as soon as the patients improved, and disappeared altogether in every case when the patients entered on convalescence.

(*b*) I could not demonstrate any spirochætes in either the blood or urine of the patients.

(*c*) In the fæces of a few cases (four) of quinine hæmoglobinuria (at the beginning indistinguishable, by its symptoms, from true blackwater fever), I was unable to find any spirochætes.

I examined at the same time the fæces of patients suffering from other diseases, and found that: (*a*) in 14 white patients (with intestinal complaints) I could not demonstrate the presence of spirochætes in the fæces; (*b*) in 23 natives (all suffering from intestinal troubles) I found spirochætes in the fæces of six.



Spirochætes seen in stained preparations. A = Patient with blackwater fever, Tete's Hospital. B = Patient with blackwater fever, Lourenço Marques Hospital.

The spirochætes found in the fæces (and bile) of the patients with blackwater fever are small filaments measuring from 3 to 7 μ in length, very thin and with one to four spirals. The stain that gave the best results was diluted Ziehl's carbol-fuchsin, allowed to

act for ten minutes. The figure shows some of the forms found in the stained preparations.[1]

The morphological characters of this spirochæte allows us to classify it in the genus *Treponema eugyrata* Werner, 1909. The spirochætes found in the fæces of the sick natives were in two cases indistinguishable morphologically from the parasites seen in the fæces of the white men suffering from blackwater fever.

CONCLUSIONS.

Has this spirochæte any connexion with the ætiology of blackwater fever or is it only one form of the *T. eugyrata*, a normal saprophyte of the human stools? The idea of considering blackwater fever as a spirochætal disease fits in well with its symptomatology, which is similar to that of other pathological conditions with a proved spirochætal causation—namely, spirochætosis icterohæmorrhagica—due to the *Leptospira icterohæmorrhagiæ*. Schüffner (1918) was the first investigator to associate the origin of blackwater fever with the symptomatology of a case of spirochætosis in a native in Java. Blanchard and Lefrou (1922) have described the appearance of a specific spirochæte in the blood (deposit of the third centrifugation) of white patients suffering from blackwater fever in the French Congo. These results have not, however, been confirmed by J. G. Thomson (1924) in Rhodesia.

The morphology of the parasite described here cannot furnish any definite conclusions on its pathogenic or saprophytic nature. It is a fact that in the fæces of normal men and animals there have been described spirochætes belonging chiefly to the species *T. eugyrata* and *T. stenogyrata* Werner, but it is true also that various investigators (Dantec, Fantham, Thomson) have described parasites of a similar morphology (the same species?) associated with different pathological conditions occurring in man (dysentery, anæmia, rheumatoid arthritis). It does not seem probable that all the spirochætes found in the intestine of man in these different conditions belong to the same species of innocent saprophytic organisms, though they all seem to have an identical morphological aspect.

Unfortunately the identification and separation of the organisms belonging to this group is very difficult, or sometimes impossible, in the present state of our knowledge. With my limited laboratory resources and lack of opportunity, I have not been able to go further with the study of the spirochætes above described. I state the facts I have found, as I think they will be of some interest in the investigation of the causation of blackwater fever.

[1] I owe the drawing of these pictures to the kindness of Dr. J. G. Thomson, School of Tropical Medicine, London, to whom I am much indebted.

NEW INVENTIONS

A NEW BED DESK.

THE methods adopted by those who wish to read and write in bed are scientifically bad and often injurious to the eyes, while the discomfort engendered after a time, even when well propped up by pillows, makes both reading and writing, and especially the latter, only possible for limited periods. In both reading and writing the chief difficulty lies in securing a steady support for the book or writing pad at a convenient angle, which must be varied according to the position of the head and shoulders when propped upon pillows. In addition, so far as writing is concerned, a support is required for the right arm and hand, for writing without such support is difficult and soon becomes fatiguing. With the help of Messrs. Hamblin I have designed a bed reading and writing desk, which does away with faulty and uncomfortable attitudes, and makes reading and writing in bed as easy as when sitting in an armchair or at a table. I hope that the apparatus will prove to be a great comfort to invalids and the bedridden, and also to that large section of the community which habitually reads itself to sleep.

The main feature of the design is a stout light board of suitable height and breadth, which is

The bed desk in use; the angle of the desk is made flatter for writing.

shaped elliptically below in order to fit into the body, the right side of the ellipse being lengthened to form a slightly curved tail which runs away behind the body and rests with its lower edge on the bed. The board thus fits the body as the patient reclines propped up by pillows, the tail of the board forming a support for the right arm of the patient when writing. This is shown quite clearly in the drawing of the desk in actual use (see Figure). The support for the board is furnished in a simple fashion in two ways. On the right side there is a double sliding arrangement which is clamped by a screw, easy to reach and to manipulate. This slide regulates the angle at which the board is supported, and at the same time affords a horizontal bearing along the bed, no matter at what angle the board may be clamped, keeping the board absolutely secure and fixed. On the opposite side of the board there is a non-sliding support also clamped by a screw. This support projects from the board at an angle easily regulated by the patient, so that its lower end rests comfortable on the left side of the bed. The object of this second support is to counteract the tendency of the board to be pushed over to the left by the pressure of the right arm when writing, and to give extra stability to the board when it is supporting a book. The apparatus can be folded up flat when not in use, and erected and folded up again by the patient with little effort.

The bed desk has been very well made by Messrs. Hamblin, Ltd., of 15, Wigmore-street, W., who have patented it and have registered for it the name of the "Kangaroo" bed desk, because it "supports itself by its tail." The desk can be supplied with the tail on the left side and the supports reversed for a person who can use only the left hand for writing or turning the leaves of a book.

Harley-street, W. ARNOLD LAWSON, F.R.C.S. Eng.

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING IN WINNIPEG.

(*Continued from p. 802.*)

SECTION OF DISEASES OF CHILDREN.

The President, Dr. ROBERT HUTCHISON (London), being in the chair, Dr. K. D. WILKINSON (Birmingham) opened a discussion on

Colon Bacillus Infections.

As a clinician, he said, he was familiar with a *B. coli* infection of the urinary tract, frequently seen in children in an acute, chronic, or recurrent form, commoner in girls than in boys, and not often fatal. The name pyelitis had been given to this condition, and although he was unable to prove that it was always a pyelitis, he felt justified in holding the opinion that it was not always part of a septicæmia or evidence of a nephritis—as some pathologists maintained. Many cases, especially the milder ones, might easily be overlooked if the urine of patients were not systematically examined, with a microscopic investigation of the sediment and culture of a fresh specimen, and the difficulty of obtaining specimens from infants and young children in general practice, with the consequent neglect to examine the urine, doubtless resulted in the omission to diagnose many of the less severe cases. The typical urine is pale and opalescent, contains a varying amount of protein, and microscopically shows pus and *B. coli*. Clinically the disease may start as early as the first week of life (some say it may even be present at birth), gradually becomes more frequent, and tends to diminish in frequency after about the eighth year. At first boys and girls are about equally affected, but after the age of one year the preponderance of girl patients gradually increases, though recent authors have found that the preponderance of girls over boys is not so great as was formerly thought to be the case. Of 117 cases—probably severe cases as they all needed hospital treatment—seen at the Birmingham Children's Hospital only nine (or 7·7 per cent.) died, which he held was weighty evidence against the recent pathological view that these cases were all due to a severe septicæmic condition with renal infection and possibly abscess formation.

Cases might be acute, subacute, or chronic, the acute often starting with a rigor or convulsions, high fever, and severe general disturbance, so that pneumonia, meningitis, or a typhoid infection may be suspected. If the possibility of pyelitis is borne in mind, and the urine examined, the diagnosis is usually readily made in these cases. In older children the symptoms and signs are less puzzling, as localising symptoms, such as tenderness in the loin, frequency of micturition, or dysuria, are found present in the majority of cases. When, however, unusual symptoms, such as vomiting, increased respiration-rate, vague aches and pains, or abdominal discomfort or tenderness are present an erroneous diagnosis of acidosis, pneumonia, rheumatism, appendicitis, or abdominal tuberculosis may be made. Subacute or recurrent cases, with fever and attacks of vomiting, simulating cyclical vomiting, may remain undiagnosed until pus and *B. coli* are found in the urine. Chronic cases may show slight signs of a general upset, with perhaps slight fever, general lassitude, anorexia, or nervousness—symptoms apparently quite unconnected with the urinary tract.

As a general rule, acute cases of all ages did well under strict treatment, though some failed to respond at all, and others did only moderately well, and became subacute or chronic. In cases which were subacute when first seen treatment had to be more prolonged to effect a cure, and in some cases what ever line of treatment was adopted proved valueless—the bacilluria persisted, and often such cases showed evidence of damage to the kidneys—the presence of casts in the urine, a high blood-urea or poor urea concentration. The prognosis in such cases was bad. In his experience there were four important requisites in the successful treatment of these cases: (1) As early diagnosis as possible, with institution of the correct treatment, (2) Rest in bed, until the bacilli have disappeared from the urine. (3) The administration of alkalis, such as plentiful doses of sodium bicarbonate or potassium citrate, given with syrup and some flavouring agent. For some years he had been in the habit of treating these cases by alternate alkaline and acid medication whereby the pH of the urine was being constantly varied; first alkalis are given till the urine is definitely alkaline, then a mixture of hexamine with acid sodium phosphate until the urine becomes acid, when the sequence is repeated. This line of treatment is inimical to the *B. coli* as well as to other urinary micro-organisms, but he did not think that the hexamine itself did much good; neither did the other antiseptics, salol or hexyl resorcinol, taken by mouth or those usually recommended to be tried locally. (4) The fourth point in the treatment is the flushing of the kidneys by a large fluid intake—as much as 50 or 60 or more ounces of fluid a day. In his experience vaccines occasionally seemed to be useful, but far more often proved disappointing.

According to McKhann 20 per cent. of children with chronic pyuria showed some abnormality of the urinary tract, which either predisposed the tract to infection or enabled a fortuitous infection to persist owing to the abnormality. In 153 consecutive post-mortems on children Bigler found abnormalities of the urinary tract in 13 per cent. In this series of 20 cases, only four died from the urinary tract infection, and as the eldest of these was only six weeks old, congenital abnormalities could hardly be said to have played a large part in this series in predisposing to urinary infection. In all chronic cases of pyuria Dr. Wilkinson recommended the taking of a cystogram and a further cystoscopic examination in doubtful or definitely abnormal cases. Bowel infections and chronic appendicitis which may be accompanied by pyuria should receive appropriate treatment. He then referred to the pathological studies of Chown and of Wilson and Schloss, who concluded from their observations that the pyuria of so-called pyelitis was really due to an interstitial suppurative nephritis, and that there was generally no evidence of pyelitis. In his opinion the cases studied by those authors were not ordinary cases of pyelitis, but instances of severe septicæmic conditions due to other micro-organisms, and that the *B. coli* was probably a secondary invader. He referred also to Helmholz's experimental work on rabbits, which showed that spontaneous *B. coli* infections occur in these animals, and that intravenous injections of *B. coli* may give rise to kidney abscesses, though these do not occur in the spontaneous infection.

In adults, said Dr. Wilkinson, *B. coli* infections were much commoner in women than in men, and furthermore, they generally produced little upset and were probably often missed. He believed that the facts pointed definitely to an ascending

rather than to a blood infection, and that they supported the clinical findings of pædiatricians that pyelitis is generally an ascending infection, with a correspondingly greater incidence in girls.

SEVERAL PROBLEMS TO SOLVE.

Dr. DAVID NABARRO (London) said it would be interesting to compare current views with those prevalent in 1910, when the same subject was discussed at the seventy-eighth annual meeting of the Association. There were, he said, several interesting problems to solve. (1) *B. coli* was normally a harmless intestinal saprophyte; what was it that made it pathogenic in the bowel or enabled it to leave the bowel for foreign parts? It might be that there were different strains—e.g., hæmolytic and non-hæmolytic (Dudgeon, Wordley, and Bawtree), others with variations in sugar fermentative power, in agglutinability and so forth, which might perhaps be associated with variations in pathogenicity. (2) By what route did the *B. coli* travel from its normal situation to the urinary passages? There were three possibilities, each of which had its supporters: (*a*) directly, via the urethra, the so-called ascending mode of infection, favoured by Dr. Wilkinson among others; (*b*) via the blood stream; and (*c*) via the lymphatics.

Blood culture experiments he had made some years ago on cases of pyuria and bacilluria with negative results had convinced him that the infection was probably not, as a rule, blood borne. He also cited Helmholz's recent paper, with the conclusions that author drew from his experiments—the most important of which was that in the rabbit the infection was of the ascending type, and that in children infections with the *B. coli* took place in the same way. Bugbee, Wilson and Schloss, Chown, and others, on the other hand, think that the infection is blood borne in those cases in which no congenital abnormality interferes with the urinary flow. In Dr. Nabarro's view a blood-borne infection was possible in a small proportion of the cases, but in the majority of the cases the infection of the bladder was probably direct (ascending) and the infection reached the kidneys via the peri-ureteral lymphatics.

Turning to the pathological anatomy of the condition, Dr. Nabarro said there was little or no direct evidence that the condition was really one of pyelitis, and already in 1910 Jeffreys, Thiemich, and Forbes had described suppurative lesions in the kidneys with, in some cases, a normal pelvic mucosa. More recently Chown, Wilson and Schloss, Bugbee, Helmholz, and others had emphasised the fact that the commonest lesion in the type of case under consideration has a diffuse interstitial nephritis, giving rise to suppurative foci of varying size, so that it was more correct to call the condition pyelonephritis than a simple pyelitis.

Discussing the bacteriology, Dr. Nabarro stated that *B. coli* was undoubtedly the commonest organism present in these cases, but that it might be associated with *B. proteus*, streptococcus, *B. lactis aërogenes*, and several other organisms; the multiplicity of possible germs in the urine raised a doubt whether these were the actual cause of the disease or merely secondary invaders.

Whatever might be the original cause of the infection there was no doubt some congenital abnormality was responsible for some, at least, of the cases of persistent or intermittent pyuria. Dr. M. Woolstein, in 4900 post-mortems, had found congenital anomalies of the urinary tract in 117—2·5 per cent.—and Dr. W. P. H. Sheldon, in an analysis which he had made at Dr. Nabarro's request of 400 recent autopsies at the Hospital for Sick Children, Great Ormond-street, had obtained an identical percentage (2·5) of similar congenital abnormalities. Dr. Nabarro quoted several cases, which had been under the care of colleagues at Great Ormond-street, of recurrent pyuria and bacilluria in which after cystoscopy and pyelography some obstruction to the flow of urine was suspected and after being operated upon by Mr. Oswald Addison, and an aberrant vessel ligatured, each case had apparently been cured. Another cause of obstruction to the urinary outflow was the presence of a valve in the prostatic urethra to which Young, Frontz, and Baldwin first drew particular attention in 1919, and of which anomaly Drs. Poynton and Sheldon recently reported a series of 24 cases from the Great Ormond-street Hospital. The clinical diagnoses made in some of these cases had been pyelitis, renal infantilism, and idiopathic dilatation of the ureters, and an important practical point to bear in mind was that the true state of affairs might easily be overlooked if the whole genito-urinary tract were not removed in toto and subsequently carefully dissected out.

As regards treatment he agreed in the main with Dr. Wilkinson's remarks. In the administration of hexamine some experiments of Drs. Hare, Lepper, and Martland showed that two factors were of importance: (1) the secretion of an acid urine; and (2) the relative vulnerability of the invading bacillus to formaldehyde, in which form hexamine is excreted in an acid urine. Opinions still differed widely, as they did in 1910, as to the value of vaccines in the treatment of these cases. Dr. Nabarro referred to cases in which patients had done well with vaccines after other treatment had failed. He emphasised the importance of early cystoscopic investigation in cases which failed to clear up promptly, and advised the systematic investigation of those cases by a team—a physician, surgeon, bacteriologist, biochemist, and radiologist.

DISCUSSION.

Dr. H. F. HELMHOLZ (Rochester, Minn.) said that when he injected *B. coli* into the circulation focal infections did not, as a rule, follow, as they did when staphylococci or streptococci were injected. He had found that after intracystic injections of *B. coli* (in man and in animals) the urine rapidly cleared if the bladder were normal, but not if it were diseased. Cocci were more harmful to the kidneys than were *B. coli*; thus, 90 per cent. of the coccal injections produced renal lesions, whereas only 40 per cent. of the *B. coli* injections did so, and after injections of the two (either together or *B. coli* after cocci) only cocci were found in the urine. The renal pelvis, he stated, should be examined very soon (within two to three hours) after death, otherwise the cells desquamate, which gives rise to the "milky" urine found post mortem. In his opinion pelvic, in addition to renal, lesions did occur in cases of acute pyelitis, but the lesions heal very rapidly—in animals after 30 days and in a child 11 days old he had found the lesions healing. Experimentally he had found that making the urine acid after alkaline inhibited the growth of germs, and to acidify the urine he had used ammonium chloride and ammonium nitrate till the pH was 5 to 5·5. This allowed urotropine to be given in big doses even until the bladder was irritated or until the urine was sterile. He had seen chronic cases of even two to six years' duration clear up with proper urotropine treatment in a few days; failing improvement he would get a urologist to see the case. His results with hexyl-resorcinol were disappointing. As regards ætiology, Dr. Helmholz held that coli infection was "ascending" rather than hæmatogenous, but in the newly born it was more likely the latter, though

it was rare to find *B. coli* in the blood after the first week of life. It was possible to get *B. coli* in the blood without its occurrence in the urine, and coli infections, which in his opinion were commoner in girls than in boys, were often associated with gastro-intestinal upsets.

Dr. H. BRUCE CHOWN (Winnipeg) said he would limit his remarks to pyuria, as it occurred in infancy and in children with no obvious malformation of the urinary tract, and his conclusions were (1) that the lesion was commonly a bilateral suppurative interstitial nephritis, with occasionally pyelitis and rarely cystitis; (2) pyelitis seldom, if ever, occurred alone; (3) the *B. coli* usually reached the kidneys by the blood stream, occasionally in girls by the lower urinary tract; and (4) there was frequently an associated infection elsewhere in the body, due to another organism; (5) the condition was probably more common in girls than in boys in the proportion of about three to two. He opposed Dr. Wilkinson's view—as being but opinion unsupported by concrete facts—that the milder cases of the disease were a simple pyelitis and that those which came to autopsy and upon which Wilson and Schloss, Helmholz, and Chown himself had built up their pathology of it, were of a severe and unusual type. In his (Dr. Chown's) opinion much more work would have to be done experimentally before the bacteriological problem—whether the condition was due to *B. coli* or to cocci alone, or to both acting in association—was solved, but he was bound to admit that Dr. Helmholz's experimental results pointed against the coccal septicæmic origin of *B. coli* pyuria. He agreed with Dr. Helmholz as to the frequency of coli pyuria in the new-born child associated with a blood infection, and he referred to the fact that an exact counterpart of the condition occurred in new-born calves, which had either not received colostrum or received it late.

Dr. R. R. STRUTHERS (Montreal) said in his experience the condition was very rare in boys—he had had only two cases in boys and both had congenital anomalies.

Dr. HECTOR CAMERON (London) mentioned that pus and bacilli in the urine might be associated with other conditions—e.g., meningitis, and referred to the fact that clinically the case might have recovered, whilst the bacilluria persisted for months.

The PRESIDENT said that the discussion had left unanswered several questions: (1) Was there any relation between the pyelitis of infancy and that of pregnancy? (2) Why did it occur so commonly on the right side? We had heard about ascending and descending and hæmatogenous infections; could there also be a direct "horizontal" extension from the bowel as, for example, from an infected appendix? There was also a dietetic factor which needed explanation—namely, that cutting down the milk in these cases often benefited the patient.

REPLY.

Dr. WILKINSON said he still believed the ascending type of case to be the commonest—this might be called the clinician's case; next that of hæmatogenous origin, or the pathologist's case; and thirdly the chronic, which went to the physician and surgeon.

On the final day of the Section Dr. H. C. CAMERON opened a discussion on

Disorders of Sleep.

We know little or nothing, he said, of the physiology or pathology of sleep, so the subject must be approached from the clinical standpoint. He proposed to deal briefly with four examples of such disorders: (1) sleeplessness and continuous crying in young infants; (2) sleeplessness in older children; (3) night terrors; and (4) enuresis. Three factors might be concerned in the causation of the first—namely: (*a*) pain or discomfort; (*b*) inherited or constitutional neuropathy; and (*c*) faulty management. The pains of dyspepsia, whether they be intestinal colic or ærophagy with distension of the stomach, were by far the commonest causes of sleeplessness. To prevent "wind," sleep must be secured; to secure sleep, "wind" must be prevented, and Dr. Cameron had found that a grain of chloral hydrate given ten minutes before each of five or six feeds for some days would often be successful in preventing wind. It allowed the child's suction reflex to function normally in taking the breast. Nasal obstruction from catarrh was another common cause of nervous unrest; this might be effectively relieved by allowing a few drops of 1 in 5000 adrenalin solution to flow into the nostrils before the child is put to the breast. The neuropathic infant could usually be readily detected by his thin and tense face and rigid limbs; the expression was usually anxious and the child readily cried or frowned. A much commoner cause of sleeplessness, however, was faulty management of the child on the part of the nurse or mother. Such a child would often do very well in an institution or hospital, and if it must be with its mother then probably the best place for it was up against the mother's back, where the searchlight of the mother's face and eyes could not play upon the child and her hands were free to busy themselves in occupations which diverted her thoughts from the child. Dr. Cameron believed chloral to be the most satisfactory hypnotic in infancy and together with a hot bath and envelopment in a light woollen shawl instead of in swaddling clothes the best antidotes against restlessness. Sleeplessness in older children might also be due to over-anxiety on the part of the mother or other points of management, such as inadequate ventilation, a heavy meal taken late at night, lack of exercise, or over-fatigue.

Dr. Cameron went on to consider the disorders night terrors and enuresis, and pointed out these were probably associated with metabolic processes, notably the utilisation by the body of the carbohydrate reserves, and a disturbance of metabolism resulted in a fall in the blood-sugar, ketonæmia, and increased nitrogen excretion. Individual children differed widely in their reaction to ketonæmia and to the accompanying hypoglycæmia, and the "nervous" child, with its tendency to "turns" or "attacks," accompanied by vomiting, pyrexia, irritability, anorexia, or nausea and other allied symptoms, had a low fat tolerance, and the turns or bouts which the mother described were the physical and nervous manifestations of the underlying disturbance of metabolism. He referred to recent experiments by Salomónsen upon the reaction of young children to hypoglycæmia and ketonæmia induced experimentally by starvation and by a diet containing little sugar and a high fat content. The symptoms produced in the children were similar to these enumerated above under the "nervous" child, and the author was invariably able to predict which individual children would show a strongly marked reaction. The blood-sugar was normally at a low fasting level during the night and this would explain why certain disturbances, such as asthma, enuresis, sleep-walking, and night terrors would be induced in nervous or predisposed children. Acetone could often be smelt in the breath and Salomensen had found that the early morning urine contained the highest proportion of acetone. The sleep of certain children

with hypoglycæmia and ketonæmia always tended to be abnormal—confusion, muttering, restless movements—and enuresis might be considered a specific night terror. Very often it was the child who cared most who did it. Rest, wise and understanding management, and a diet rich in sugar and low in fats were the chief needs of the nervous child. In practice night terrors were often well controlled by glucose, but Dr. Cameron was unable to speak as confidently of the control of enuresis. In some inveterate cases he believed a true hysterical paresis of the sphincter developed which perpetuated the incontinence. In boys there sometimes occurred a concomitant incontinence of fæces which was hard and scybalous and escaped slowly through a sphincter which was toneless and paretic. As in the case of the sleepless, restless infant, so in that of the bed-wetting child it might be the over-anxious or apprehensive mother who was the cause of the perpetuation of the trouble and who needed management.

DISCUSSION.

Dr. R. F. RORKE (Winnipeg) said the new-born child needed 18 to 21 hours' sleep in the day; at two years a child should sleep 14 to 16 hours out of the 24. Sleep in these children was profound, so that noise did not rouse them. Infants who lack the sucking reflex cried a good deal unless the breast were soft and the nipple long; impatient children who were unable to get much milk also cried. In both these cases sleep was disturbed, as it also was in neuropathic infants. As a rule the child improved at three months of age or at the latest six months. It was important to reassure the mother that it was not her milk which was entirely at fault and also to secure her rest at night. Sometimes an improvement might be effected by cutting down the cream and butter, also the protein, in the mother's diet. A dose of castor oil given to the child at 4 P.M. followed by boiled water for 12–18 hours might do good. For mouth-breathers a tampon with liquid paraffin so that two or three drops trickled down each nostril was often efficacious, and early removal of adenoids was advisable. Diseases such as infections, otitis media, pyelitis, might interfere with rest and lead to sleeplessness.

Dr. A. H. SPOHN (Vancouver) said that pain and inherited neuropathy were important causes of sleeplessness. He had also seen disturbed sleep follow excesses of carbohydrates and condensed milk, though it might be the result of colic in these cases. Hereditary predisposition might play a part in the production of disturbed sleep and hypoglycæmia might be an associated condition. The parents should be examined and if necessary suggestions made for a readjustment of living and for the improvement of the home life. He was interested in the hysterical feature referred to by Dr. Cameron in enuresis. In Canada the drugs used were atropine and luminal, rather than chloral hydrate, as recommended by Dr. Cameron.

Dr. ALAN G. BROWN (Toronto) referred to the relation of thymus disease to these conditions. In many children who were restless by day and poor sleepers no cause could be found except an enlarged thymus by X ray. After treatment by one or two exposures to X ray there was marked relief and the same remark applied to children in whom adenoids were suspected but not found, only a turgescence of the mucous membrane and an enlarged thymus on taking an X ray of the chest. In the case of the neuropathic infant or, as they called it in Canada, the hypertonic infant, he had found that atropine relieved restlessness and brought about sleep. He did not agree with Dr. Rorke that castor oil was good for these babies.

Dr. N. R. RAWSON (Melita) referred to the treatment of enuresis by distension of the bladder and quoted 20 cases which were said to have been benefited thereby.

REPLY.

Dr. CAMERON said he agreed with Dr. Rorke about the difficulty with sleepless infants in tenement houses, when the disturbed neighbours knocked on the wall or ceiling. This made the unhappy mother still more agitated, who in turn would pass on her agitation to the infant, so that a vicious circle was thereby set up. He thought Dr. Spohn stressed the eugenic side more than he himself would do, for "nervousness" might occur in only one child in a family, and even then it might be transitory and due to a transitory cause. Answering Dr. Brown, he said we in England did not see large thymuses so frequently as they appeared to do in Canada and that aspect in the causation of restlessness was new to him. His genito-urinary colleague at Guy's Hospital had had some success in the treatment of enuresis by bladder distension, but he (Dr. Cameron) thought the effect was largely psychological, as his colleague was a very "persuasive" man. Glucose might help in night terrors and to a less extent in enuresis; ovaltine and other similar foods might produce sleep.

Artificial Sunlight.

Dr. A. EIDINOW (London), whose paper was summarised and read by Dr. Alan Brown, gave a historical survey and review of the physiology of light therapy, with a description of the apparatus used, the indications and contra-indications for treatment. The results of light treatment, as of exposure of the body to the sun and open air, included: (1) increased warmth of the body; (2) vasodilatation and increased blood flow; (3) increased transudation of lymph; (4) increased metabolism; (5) stimulation of heat regulating mechanism; (6) analgesic and sedative effects; and (7) increasing resistance to infection. Ultra-violet radiations might be applied in one of four ways: exposure of normal skin to sources of light, exposure of ulcers or other diseased tissues to a focused beam of light, the oral administration or injection of irradiated drugs, foods, or tissue extracts, &c. The reaction of the skin depends on the following important conditions: the intensity of radiation, the character of the wave-length of rays, the time of exposure, distance from source of light, the sensitivity of the patient's skin, and the area of skin exposed. He distinguished two methods of technique in treatment—the long-ray and the short-ray therapy—the former included sunshine and skyshine as used in the treatment of surgical tuberculosis. This was the principle of the Finsen light treatment, which had been in use for over 20 years and given good results in debility and tubercle. No importance was attached to skin reactions such as erythema, but pigmentation finally developed. He described his new "daylight" lamp, so called because the rays were similar to daylight, to which patients might be exposed for hours and might even sleep under with advantage in cases of tubercle and debility. Animals exposed to the lamp have shown increased resistance to infection, and its rays have also antirachitic and bactericidal properties. Long-ray therapy was contra-indicated in acute pyrexial disease and in septicæmia or toxæmia, but during convalescence it should prove useful.

For short-ray therapy the lamps used were

tungsten arc, long-flame arc lamps containing metallic cord carbons, and quartz mercury-vapour lamps. Short rays produced rapid erythema and Dr. Eidinow gave detailed conclusions from his own observations upon the use of these rays, for he had found that the greatest errors in radiation therapy had resulted from confusion in the use of ultra-violet radiations. The technique of short-ray therapy should be strictly controlled and be done by an expert. The types of cases which responded to short-ray therapy were general debility, secondary anæmia, subacute and chronic tuberculous disease of lymphatic glands, lungs, and mucous membranes, asthma, subacute and chronic inflammatory diseases of the eyes, eczema, acne, alopecia, staphylococcal skin infections, rickets, and osteoporosis. On the other hand, rheumatic conditions, such as arthritis, fibrositis, and neuritis, responded more favourably to long-ray therapy. There were no specific laboratory methods to determine the index of reaction of the body to radiation; each case must finally be judged from the clinical evidence. Advanced heart disease, arterio-sclerosis, high fever with intoxication, nervous irritability, and impairment of the renal functions were the chief contra-indications to radiation therapy. The greatest advance in radiation therapy followed the discovery of the antirachitic properties of ultra-violet rays. These have been shown to be due to a photo-chemical reaction by which ergosterol is irradiated and transformed into vitamin D. This was absorbed by the capillaries of the skin and so distributed in the body, where it produced its beneficial effects. Similar results could be obtained by the oral administration of irradiated ergosterol. He had also concluded from his observations that ultra-violet rays absorbed by living cells produced a bactericidal effect locally at the site of irradiation, which led to an increased bactericidal power of the blood. The growth of plants depended upon the vital functions of the rays of the sun, and our existence was indirectly controlled in the same way, for there was ample evidence that these rays had great influence on our mechanism to immunity, resistance to infection, growth, and tissue metabolism.

DISCUSSION.

Dr. ALAN BROWN said there was little to criticise in Dr. Eidinow's paper, and the work which he and his colleagues had carried out in Toronto fully bore out Dr. Eidinow's conclusions except that they had very little experience of local therapy with the quartz mercury-vapour lamp, as lupus did not occur in Canada. Light therapy certainly increased the resistance to disease and Dr. Robertson had found that the resistance of irradiated rats to a particular germ was 600 times greater than that of non-irradiated rats. Dr. Brown had found that artificial light applied during November and again in February was very beneficial for the prevention of colds. Dr. Eidinow had made no reference to the effect of these rays on digestion, but, in conjunction with Dr. Price, of Calgary, he (Dr. Brown) had found that by irradiation the digestion of children was improved. Sunshine was more useful than the artificial light from lamps, but at the latitude of Toronto the invisible or chemical rays were effective only from the early part of March till early in October. Skyshine was also beneficial (about half to two-thirds as good as sunshine) for rickets could be prevented or healed by it. They had carried out many experiments in Toronto with vitamins by charging cereals with vitaman D and had had beneficial results in children and experimental animals. It required 100,000 units of vitamin D to produce an overdose, so that treatment by this vitamin could not easily be overdone.

Prof. H. B. CUSHING (Montreal) said that in Montreal and other cities in temperate climates contagious diseases, other than typhoid and dysentery, were practically non-existent during the months of May, June, and July and in his opinion the explanation was to be found in the greater amount of sunlight which prevailed during those months. This acted either by destroying the germs of these diseases or by raising the patient's resistance. We might be able ultimately to eradicate acute respiratory diseases by installing artificial sunlight lamps in our living rooms, schools, &c

Dr. NABARRO referred to observations made with milk irradiated by a simple method devised by Mr. J. O. Hickman whereby the taste of the milk was unaffected and the vitamin D content greatly increased. Such milk led to a considerably greater rate of growth in normal children than did non-irradiated milk; it often gave the necessary fillip to debilitated children who reached a certain stage of nutrition or of convalescence and then did not improve, and it also appeared to increase the resistance to catarrhal conditions, such as the common cold.

Dr. H. CHODAK GREGORY (London) said that children certainly improved under skyshine and asked if a cloudy condition of sky made any great difference in the effect produced.

Prof. W. E. DIXON (Cambridge) expressed the opinion that we might have too much light, as of most good things. People living in the tropics often avoided the light as much as possible. Many other ways of raising the resistance to disease were known; the late Dr. Washbourne showed that the injection of water into animals would do it, and Abrams's box would do the same; it was largely a psychological problem.

Dr. HUTCHISON said he came to the meeting a sceptic, but after all he had heard he was converted; he was, however, surprised that no speaker had referred to the experiments conducted by the Medical Research Council which seemed to show that children exposed to artificial sunlight were not benefited.

REPLY.

Dr. ALAN BROWN, in reply, said that the value of skyshine was one half to two-thirds that of sunshine, according to the presence or absence of clouds. Animals did well under skyshine. Pigmentation was protective but was not essential, for rickets could be cured without it. Two hours per day was the maximum duration of exposure allowable; this could be between 11 and 1, except in summer when the exposure should be in the morning between 9 and 10 and in the afternoon from 4 to 5 or 5 to 6.

BRIGHTON SANATORIUM: NEW MAIDS' HOME.—On Oct. 15th the Mayor of Brighton opened the new maids' home at this large borough institution, which has been erected at a cost of over £7000 to meet the wishes of the Health Ministry. Great difficulty had been experienced for many years in retaining maids and nurses at the sanatorium, largely owing to the absence of proper provision for their sleeping, rest, and leisure hours. Dr. Duncan Forbes, medical officer of health, explained the advantages of the new home, and the consequent rearrangement of the various wards which was now possible. He said that probably in no similar institution in England was such a variety of work undertaken. Some £70,000 had been spent upon the sanatorium since it was hurriedly conceived and started with a few wooden buildings in 1881.

MEDICAL SOCIETIES

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.

AT a meeting of this Association, held on Oct. 21st, Dr. LETITIA FAIRFIELD gave her presidential address on

The Effects in Medical Practice of the Local Government Act, 1929.

She pointed out that the present organisation of the Public Health Services can be traced back to very varied sources, and these remote origins still determine their composition. First came the poor-law, which, although instituted in 1601 with the express duty of caring for the destitute sick as part of its function, had made no suitable hospital provision of any kind when the Guardians of the Poor took over its administration in 1830. The very fine, if unequal, service handed over to the Public Health authorities on April 1st, 1930, was thus entirely the work of the last 96 years. The Public Health Service proper was much younger as it derived from the General Board of Health, founded in 1848. So great was then the fear of bureaucracy and centralised control that for 25 years the Board was not allowed jurisdiction of any kind in an area unless the death-rate was over 23 per 1000. Dr. Fairfield said that the success of the operations of the Board in protecting the public against local vested interests was probably the secret of its rapid growth as compared with other authorities. Modern discoveries in medicine extending the range of knowledge of infectious disease, the new conceptions of preventive medicine, which gave birth to the school medical service, and the maternity and child welfare movement, all contributed to extend the domain of the medical officer of health. When the chaos of administrative effort had become impossible to overlook, and the shortcomings of the guardians, as a body, for administering treatment were likewise the subject of comment by a Royal Commission, it was, naturally, the medical officer of health who was entrusted with the organisation of a united service which would place the full resources of medical science at the disposal of the people of the country.

Dr. Fairfield drew attention to the fact that the poor-law had not been and could not be abolished, for it conferred important rights as well as imposed restrictions. The poor-law stood between the poor man and death from starvation and neglect in illness; it gave him a statutory claim on the pockets of his fellow-citizens, and this obligation could not be handed over to the caprices of charity or the vagaries of municipal policy—which might give much more, but might give nothing at all. If and when the transferred infirmaries were administered under the Public Health Act, the obligation to treat every destitute applicant would remain. In London the Public Health Committee took over from the old Boards of Guardians 29 infirmaries, comprising 16,500 beds, and 14 allied institutions with 11,500 beds in addition to 34 special hospitals (fevers and children's, &c.) totalling 15,000 beds. The L.C.C. was now, moreover, responsible for domiciliary treatment of the sick poor and for medical care of the chronic sick, the aged and infirm, and of over 8000 children in the former poor-law schools. The staffing of the transferred hospitals was giving rise to much controversy throughout the country, and experiments in several methods would probably be worked out. Some authorities might prefer to develop on the lines of a whole-time service as in the R.A.M.C., with room for specialisation and research, others would follow the model of the voluntary hospitals and rely on visiting consultants, while in rural areas it was suggested that general practitioners might have a considerable share in the work. The improvement of domiciliary medical treatment was also admitted to be of great importance. Dr. Fairfield pointed out that not all the sick poor needed to be treated in hospital, and institutional treatment of an adequate kind was now so costly that in her view no beds should be occupied if the patients could be dealt with in their own homes.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of this Society on Oct. 22nd, with Prof. GRAHAM SIMPSON, the President, in the chair, Mr. A. S. PARKES, D.Sc., Beit Memorial Research Fellow at University College, London, read a paper on the

Regulation of the Ovarian Cycle.

Various lines of work, he said, all tended to show that the activity of the ovary was regulated from some external source. It was found many years ago that the ovary of an immature animal grafted into an oöphorectomised adult female immediately underwent development and began its morphological and endocrine cycle long before it would have done so in its original environment. This and similar observations demonstrated quite clearly that the functional age of the ovary was regulated by that of the soma. It was now well known that the number of follicles ovulating at a time was governed, not by the amount of ovarian tissue present, but by the amount available of some substance in the circulating blood. Periodic action of the œstrus-producing hormone could also be demonstrated after complete elimination of the cyclic structures of the ovary by exposure to X rays. The periodic mechanism, whatever it might be, was thus probably located elsewhere than in the ovary.

Experimental work during the last few years had revealed an amazing mechanism whereby substances elaborated by the anterior lobe of the pituitary body activated the ovary. One of the anterior lobe substances was concerned in the maturation of the Graafian follicle and ovulation, while another was responsible for causing the formation of the corpus luteum from the shell of the ruptured follicle. The "luteinising" substance administered to an animal with a quiescent ovary caused the follicular granulosa to undergo luteinisation without the intermediate act of ovulation. The other substance caused the quiescent ovary to enter upon a phase of follicular maturation culminating in ovulation and the formation of the corpora lutea. In each case changes were observed in the accessory organs corresponding to the phase induced in the ovary and resulting from the stimulation of ovarian endocrine activity. The action of the substances was exerted solely on the ovary and thence on the accessory organs. Anterior lobe preparations had no effect in animals whose ovaries had been removed.

The discovery of the anterior pituitary substance had explained the nature of the stimuli responsible for evoking the different phases of ovarian morphological and endocrine activity, but little progress had been made in elucidating the means whereby the periodic activity of the anterior lobe hormones was organised. Presumably some kind of endocrine cycle existed in the anterior lobe, but attempts to obtain histological evidence of this had so far been abortive. In any case, whatever the cycle mechanism in the anterior lobe might be, it was necessary to suppose that it could be modified by such events in the accessory organs as pregnancy, during which prolonged luteal activity was found.

REVIEWS AND NOTICES OF BOOKS

Insomnia.

By H. CRICHTON-MILLER, M.A., M.D., Hon. Director, Tavistock-square Clinic. London: Edward Arnold and Co. 1930. Pp. 172. 10*s.* 6*d.*

OF recent years modern psychology and psychotherapy have made valuable contributions to the ætiology and treatment of sleeplessness. Nevertheless, we are still far from having reached a complete explanation of the physiology of sleep and a satisfactory solution of the problems of insomnia. This volume, described as "an outline for the practitioner" makes no claim to be an exhaustive study of the subject of sleep and its disorders, but rather to present to the busy practitioner some of the more important aspects of insomnia and thus to introduce him to the wider problem of the psychoneuroses. The more general considerations are dealt with in the first section of the book; the various definitions of sleep are mentioned and its nature and mechanism are briefly discussed. The factor of emotional conflict is rightly emphasised and various conclusions are reached, as, for instance, that "insomnia is a failure to achieve a normal degree of that state of minimal activity of mind and body which we call sleep"; that it consists in an interruption of the mechanism, as yet unfathomed, which regulates dissociation; and that sleeplessness is a manifestation of "insecurity."

The chapter dealing with treatment contains much sound and practical advice. The author points out the fact, which is only too true, that the usual therapeutic attitude to insomnia is an endeavour to induce sleep by alterations of environment rather than to treat the insomnia; that is, by attempting to adjust surroundings to the patient instead of trying to educate the patient up to his environment. Massage, muscular relaxation, the elimination of toxic factors, digestive disturbance, occupation, and especially the patient's attitude to his symptom, all have their place in treatment. We ourselves know of no way to diagnose "adrenal instability."

The various theories concerning the mechanism of sleep, which are numerous and often contradictory, do not all deserve the space allotted to them. Pavlov regards internal inhibition and sleep as one and the same thing and his work on condition reflexes is well summarised. From the psychological aspect, dissociation, dreams, and hypnosis are discussed in their relation to sleep and the views of different psychological schools, notably those of Freud and Jung, are reviewed with regard to the psychoneuroses. The form of psychotherapy which, in the author's experience, appears to have given the most favourable results, is one which might be termed "psychological exploration" rather than analysis. Hypnosis is also advocated for certain cases and especially for those not sufficiently intelligent to coöperate in other forms of psychotherapy. In a section dealing with the medicinal treatment of insomnia the author shows a preference for luminal given two hours before sleep is required, with Liq. Brom. Chlor. Co. (B.P.C.) taken at bedtime, the dose of each preparation varying with the severity of the case. The book closes with a chapter containing descriptions of nine illustrative cases, the patients having complained of insomnia with or without other features. These cases are not complete clinical pictures but are intended to serve merely as typical problems in diagnosis and treatment.

The style of presentation is occasionally involved. The work, however, is to be cordially recommended for the purpose for which it is intended—as an outline for the practitioner. It also serves as an admirable introduction and up-to-date review of a difficult subject. There is an excellent bibliography.

Modern Otology.

By JOSEPH CLARENCE KEELER, M.D., F.A.C.S., Associate Professor of Otology, Jefferson Medical College. Philadelphia: F. A. Davis Company. 1930. Pp. 858. $10.

THIS large text-book on otology reflects the extensive experience of its author, but is incomplete in certain respects, and in others not very well arranged. For example, the subject of vestibular tests is discussed early in the book under physiology, and again at greater length in a later chapter on diseases of the internal ear. This makes for redundancy, and in neither place is the practical application of this intricate matter so set out as to enable the practitioner to carry out, and to make proper deductions from, these tests; and an important mistake is made when it is stated that douching the right ear with cold water produces nystagmus to the right side. Although no direct treatment is of avail in otosclerosis, attention to concurrent anæmia or endocrine disturbance is of some value, and there are combined cases in which the local treatment of catarrhal conditions are helpful; these matters might usefully have been discussed. Again, in the section on aural furunculosis, general treatment receives no mention.

For the rest, Prof. Keeler's views, founded on his personal experience, will be read with interest. In acute otitis he favours routine syringing after paracentesis; in his opinion spontaneous perforation of the drum is usually of insufficient size, frequently heals prematurely while the ear is still suppurating, and should usually be enlarged. In dealing with the indications for operation in acute mastoiditis, he states that operation should be performed without delay whenever tenderness can be easily elicited; this dictum takes no account of the stage of the disease when the symptom occurs, and is contrary to the general opinion that mastoid tenderness is very common in the early days of any acute otitis. In the performance of the mastoid operation he considers exposure of the dura mater in the middle fossa a very serious accident. He recommends ligation of the jugular vein before any intervention on the lateral sinus. After antrotomy, or the Schwartz operation for acute mastoiditis, the wound is packed

until the cavity is completely closed, the time required being eight to ten weeks. This operation is described in the chapter on chronic mastoiditis, and the indications for the two types of operation are not very clearly given.

This work well illustrates the difficulty of compiling well-balanced text-books. The author states in the preface that he undertook the task of its preparation because he had always felt existing text-books to be unsatisfactory; but in spite of his obvious sincerity of outlook, his attempt to improve over many predecessors is not really successful.

Treatise on Materia Medica and Therapeutics.

By the late RAKHALDAS GHOSH. Twelfth edition. By BIRENDRA NATH GHOSH, F.R.F.P. & S. Glasg., Examiner in Pharmacology, University of Calcutta and State Medical Faculty of Bengal. Calcutta: Hilton and Co. London: H. K. Lewis and Co., Ltd. 1930. Pp. 763. 12*s.* 6*d.*

THIS work has been thoroughly revised in the light of recent investigations, a good many of the less important drugs have been deleted, and a number which are popular at the moment, such as sanocrysin, novasurol, tryparsamide, and ephedrine have been introduced. We have here a clear account of present-day knowledge of materia medica and therapeutics, and the work should continue to merit the great popularity it enjoys among Indian students of medicine.

Surgical Diseases of the Thyroid Gland.

By E. M. ROBERTS, M.D., Associate Professor of Surgery, McGill University; R. R. FITZGERALD, M.D.; and P. G. SILVER, M.D. Philadelphia: Lea and Febiger. Pp. 238. $3.50.

THIS book in small compass presents the surgical aspect of the goitre question succinctly, accurately, and in an attractive and readable fashion. The account is founded upon the study of 700 patients who have passed through the goitre department of the Montreal General Hospital. The care with which the work has been carried out is obvious and lends weight to the authors' statements and opinions. We would select for special mention the sections on exophthalmic goitre and the discussion on the ætiology of thyroid enlargements. The book is very well written (except that occasionally the author uses a clumsy adjective such as "goitrigenous"), and well printed and illustrated. It should be read by all surgeons interested in goitre.

Recent Advances in Analytical Chemistry.

Vol. I.: *Organic.* Edited by C. AINSWORTH MITCHELL, M.A., D.Sc., F.I.C. London: J. and A. Churchill. 1930. Pp. 421. 12*s.* 6*d.*

THE biological worker is often forced to waste time in searching the literature for methods of analysis suitable to a given problem; not only are many of the most significant advances published in industrial journals which are not readily accessible to him, but also he is often quite unable to assess the true value of the various contributions to the mass of new methods and improvements published every year. This critical summary of the advance in analytical methods during the last ten years will give him much help. Each chapter deals with the special analyses demanded in the various industries, such as sugar, oils and fats, milk and milk products, gas analysis; and each chapter is written by an authority whose work fits him peculiarly for the task. Among these specialised analyses the research worker will find hints which will enable him to devise methods for his own problems. Dr. Dorothy Jordan Lloyd contributes a chapter on the analysis and determination of the constitution of the proteins. The inclusion of descriptions of physico-chemical determinations, of methods of biological assay, of the use of enzymes as an aid to analysis and of physiological methods is unusual in a book on chemical analysis and will give great satisfaction. It is to be regretted that the authors do not set out the results of their own experience to a greater extent, for practical hints in technique are more needed in analysis than in any other branch of chemistry.

In addition to the large number of references, an adequate bibliography is supplied at the end of each chapter. The publication of the second (inorganic) volume will be eagerly awaited.

Cosmetic Treatment of Skin Complaints.

By Prof. E. KROMAYER, Berlin. London: Humphrey Milford, Oxford University Press. 1930. Pp. 110. 6*s.* 6*d.*

THE German original of this translation was recently reviewed in this journal, and the comments there expressed may be taken to apply to the English version. The translator's identity is not revealed, but the work has been well done. The illustrations are identical with those of the second German edition (1929). Prof. Kromayer, whose fame in the realm of actinotherapy will rank next with that of Finsen, is admirably qualified for the task he undertakes in this small manual. His recommendations, although they may not entirely commend themselves to those with strictly dermatological experience, are deserving of the most careful consideration. This applies in particular to the specialised procedures with rotary instruments—the burr or rasp, and the cylindrical knife. Without a practical demonstration of the method or its results an exact opinion is not possible. The principle involved is simple, and aims at removing stigmata of all kinds from the epidermis, with a minimum of damage to the underlying cutis, injury to which inevitably leads to scarring. Among common conditions in which the author recommends the procedure are boils (cylindrical knife or punch), comedones (rasp or drill), acne abscesses (punch), megaloporia (rasp), and freckles (rasp). The removal of so delicate a lesion as a freckle with such an instrument as a rasp would seem to require a delicacy of touch given to few. It must be remembered, however, that the pigment-forming cells are situated in the basal cell layer of the Malpighian rete, where caustics, if they penetrate at all, might destroy too much and give rise to hypertrophic scars. It is satisfactory to note that the X ray treatment of hypertrichosis is condemned, although it is difficult to see, without a practical demonstration, how the method of cutting out hairs with a cylindrical punch, 8 mm. in diameter, can be superior under any circumstances to electrolysis. The prescriptions are all simple and based on classical formulæ, but the most valuable sections of the book are those dealing with the indications and technique of the famous Kromayer lamp, which since its introduction over 30 years ago has not been excelled in its special dermatological field, and has undergone but few mechanical modifications.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 8, 1930.

THE POSITION OF NURSING.

A LETTER by Dr. E. CARLING, published in these columns on Oct. 11th, set out the difficulties of recruiting for the calling of nursing, emphasising the fact that nursing does not any longer attract enough young women having the proper educational standard. There is a twofold position to consider—first, the enlisting of probationers, and, secondly, the conditions of service offered to trained nurses; and we felt that THE LANCET would be discharging an appropriate duty by arranging for a Commission of Inquiry that would assist in the devising of practical remedies for conditions which affect the sick throughout the country. The composition of that Commission is nearly complete. It will consist of members of the medical and nursing professions, and of persons in a position to know the educational and economic issues involved. The names of the Commission will be published shortly. While delegates from official bodies have not been invited to join the Commission, that body will count upon their sympathetic coöperation.

THE PUBLIC HEALTH.

EARLY this week Sir GEORGE NEWMAN issued his survey[1] of the public health during 1929. The report, as he is careful to point out, is not a scientific text-book. Avoiding technicalities and details of research it presents the established elements of knowledge essential to the guidance of the authorities in their business of providing for the health of the people in their charge. The medical department of the Ministry of Health over which Sir GEORGE NEWMAN presides is itself a complex organism. Separate departments deal specially with (1) infectious disease; (2) maternal and child welfare; (3) tuberculosis and venereal disease; (4) food and drugs; (5) general practitioner services; and the activities of the whole may be compared to those of a five-rayed asterid, each arm of which is activated by numberless podia, and with a single coördinating madreporite situated near the middle of the central body. The population surveyed comprises nearly 45 million persons among whom, owing to declining birth- and death-rates, the proportion of children is decreasing and the proportion of persons past the prime of life increasing, with the result that the average age of the population is steadly rising and medical interest centres more and more on middle age. The principal causes of death occur in the same order of precedence as last year, with certain minor variations. Among every thousand recorded deaths 225 are due to diseases of heart and circulation, 157 to bronchitis, pneumonia, and other respiratory diseases, 107 to cancer and other malignant disease, 82 to diseases of the nervous system, and 71 to tuberculosis in its varying forms. The corresponding figure for influenza is 55, for the outbreak in the early part of the year was the most severe from which the country has suffered since 1918. Tuberculosis, nervous diseases, malignant diseases, and premature birth all show a proportionate decline in death certification, while respiratory diseases, including bronchitis and pneumonia, have increased as a result of complications of this kind which accompany influenza. Sir GEORGE regards it as both encouraging and gratifying to find so relatively sound a condition of health among the English people at the present time. It is, of course, not possible to estimate the incidence of sickness which is not fatal, but there is no reason to doubt the general lessons of a sample table given in last year's report showing that among a thousand insured persons in receipt of medical benefit, 208 were suffering from respiratory disease, followed in diminishing frequency by abnormalities and irregularities of the digestive system (122), rheumatic disorders (82), debility, neuralgia, and headache (81), abscesses and septic conditions (74), with diseases of the nervous system following some way behind. Such a category is clearly of the roughest sort. What conditions can be classified with exactness as rheumatic must vary with the meaning that is attributed to the term rheumatic, while debility and neuralgia in association with headache form a still vaguer picture. But any closer classification would substitute error for uncertainty.

During the year no important epidemic of disease, other than influenza, occurred to upset the normal routine of health administration. The incidence and mortality of enteric fever again decreased, while those of scarlet fever increased somewhat; it is satisfactory to note that the incidence and mortality of encephalitis lethargica, which in the past have closely followed those of influenza, have not done so this year. The absence of disturbing elements has made it easier to observe the slow quiet progress in dealing with some disorders of childhood which have almost come to be accepted as untouchable by medical endeavour. During the year measles accounted for 3388 deaths, the greatest number from any of the infectious diseases of childhood, but for the first time local authorities are beginning to use the serum of convalescents to protect children who have been exposed to infection. The method is almost contemptible in its simplicity, and on page 83 are printed, side by side, two little cautionary stories of the medical officer who did and the one who didn't. A single adult, it seems, may provide as many as 20–50 protective doses, and it is not even necessary to go outside the ranks

[1] On the State of the Public Health. Annual Report of the Chief Medical Officer to the Ministry of Health for the Year 1929. H.M. Stationery Office. Pp. 240. 3s. 6d.

of the health department to obtain the material for immunisation. In other infections the immunising principle is also gaining ground. Children are being protected against diphtheria in clinics and at school by 37 authorities who have obtained the necessary sanction; the cost of immunising a batch of 150 children may be less than that of treating a single case of established disease. In one district the showing of a persuasive film made it necessary to open five clinics a week instead of one. In scarlet fever antitoxin treatment is justified even in mild cases by the more rapid recovery of the patient and the lessened tendency to complications. Similar methods are being tried for infectious diseases of the nervous system whose record of mortality is still of the same order of importance as the numerically more impressive zymotic diseases. While poliomyelitis has increased a little and encephalitis lethargica has declined, our ignorance of the epidemiology of these two diseases is frankly admitted.

The event of the year in public health administration has, of course, been the passing of the Local Government Act and the changes consequent thereupon. Unfortunately, it is difficult for anyone unacquainted with official modes of speech to visualise what exactly is happening even in the lucid pages of this report. It is noted that 16 out of 62 county councils and 49 out of 83 county borough councils have formally abrogated their powers of dealing under the Poor-law Act with some of their medical services, which will henceforth be performed exclusively under health committees. There are other ways in which health services can be unified under the new legislation. For instance, 7 county and 21 county borough councils have assigned to some particular committee, other than the public assistance committee, the domiciliary relief of expectant and nursing mothers; 7 and 11 respectively have done the same in regard to mentally defective persons. Outdoor medical relief has been assigned to the health committee by 7 councils and the maintenance of poor children to the education committee by 31 other bodies. Apart from such formal transference, the gradual absorption of poor-law medical functions will be largely aided by means of the normal administrative machinery of the local authority. There is an interesting passage in this section of the report dealing with the sick-wards of the late poor-law hospitals and institutions. Some of those responsible for the care of the bedrid infirm have advanced reasons why it is preferable for many persons now being maintained in the hospital to be cared for in appropriate wards in the "house." The care and attendance they require is there given more consistently by women skilled in this work than by rapidly changing groups of probationers in training, even under the direction of a nursing sister, while the routine of these wards can be better adjusted to secure a homely atmosphere of comfort for the old people. Should they develop acute illness or be recognised as in need of treatment they can be quickly transferred to an acute hospital ward. This is an interesting point of view.

In his concluding paragraph Sir GEORGE has a kind word to say for the newspaper press as the most effective means of educating people on the importance of health, if only when acting as interpreters their interpretation is true and educative rather than propagandist.

TRANSMISSION OF MENTAL DEFECT.

THE statement that 80 per cent. of mental deficiency is hereditary is often taken to mean that the majority of certifiably mentally defective children are offspring of certifiably mentally defective parents, or at least that many defective members will be found in their families. In fact, this estimate includes many cases in which a familial psychopathic strain is deduced from abnormalities among collaterals such as uncles and aunts. The question of direct transmission has been the subject of a small investigation by Dr. A. C. WILLIAMS, and his results are given in the annual report of the School Medical Officer for London. On the statements of teachers, social workers, and the like, he classifies the parents of 100 children admitted to special mental defective (M.D.) schools into five groups: (1) superior, (2) average, (3) inferior, (4) unstable, and (5) mentally defective. By "superior" he seems merely to mean above the average for the district, and he uses similar criteria for "average" and "inferior." "Unstable" covers the criminal and alcoholic, while "mentally defective" includes only those who have been at some time certified or have been pupils of an M.D. school. The M.D. school examinations in London have been going on for so many years that most of the mentally defective under middle age would be caught in this sieve, though not quite all. The status of the parents he gives as follows: superior, 15; average, 45; inferior, 28; unstable, 8; and M.D., 4. The high figure for the "superior" group is somewhat surprising, and the percentage of parents proved to be mentally defective is small, especially as the cases included all those where either father or mother was mentally defective. But since many (perhaps half) of the parents would have missed the school "sieve" because of their age, or for other reasons, it is likely that the figure 4 would be increased considerably, perhaps nearly doubled, in an ideally complete investigation. While the inferior and unstable parents are together given a total of 36 per cent., it is added that "some may have been classed as 'average' owing to paucity of information, and it is probable that this figure should be raised to nearly 50." The modifications in these figures detract from their value, but their significance is increased by the results which Dr. WILLIAMS obtained from an independent group of 66 families of which the headmistress of an M.D. school had accurate knowledge. These figures tallied remarkably closely with those given above, the mentally defective parents being 5 per cent. and the inferior and unstable 32 per cent. Further-

more, the results are curiously in harmony with those of an inquiry by the Birmingham After-Care Committee, which noted the mental condition of 276 children, all of whom had a parent who had attended a special M.D. school. Of these children, 250 were attending ordinary schools, 12 were at work (one being M.D.), 8 were physically defective, and 6 were M.D. Thus, in all, there were 7 cases of mental deficiency, or rather less than 3 per cent. All these children were over 5, but many of them were under 7, and so would have missed examination—that is to say, the true percentage was higher, perhaps 5 or 6 per cent.

For a study of this kind the ideal would be to have direct mental examination of large numbers of children, of their parents, and their grandparents. This is, of course, impossible, and all that can be said at present is that the proportion of direct transmission from certifiable parent to certifiable child is very small, probably between 5 and 10 per cent., the majority of defectives being the offspring of persons not themselves certifiable but of inferior or unstable mentally. Dr. A. F. TREDGOLD says that his observations show that "in relation to the total number of defectives, the proportion of those who are the offspring of a certifiably defective parent or parents is extremely small."[1] Dr. WILLIAMS also classified the status of the parents of a small group of imbeciles, and the results showed the feature noted by Dr. E. O. LEWIS, that defectives of the lowest grade are often the children of persons of normal or even superior intellectual capacity. This phenomenon may be at least partly accounted for by the fact that many of these children are cases of secondary amentia (if mongols are included under that heading).

In the same report is given Dr. F. C. SHRUBSALL'S analysis of the records of 1360 cases dealt with under the Mental Deficiency Act, in which detailed inquiries were made into the family. In this important series it was found that in 9·5 per cent. one or more of the brothers and sisters were also mentally defective (though in nearly 1 per cent. a sibling had won a scholarship) and it was remarkable that the frequency varied inversely with the grade of defect; that is, the feeble-minded had defective siblings in 11·6 per cent., imbeciles in 5·7 per cent., and idiots in only 4·3 per cent. Dr. SHRUBSALL remarks that "in all but seven of the instances in which more members than one of the sibship were mentally defective, the type of defect found was simple primary amentia, often of the sub-cultural variety," and the greater proportion of defective siblings in this type and the highest grade was illustrated by an earlier analysis (in 1912) by Dr. SHRUBSALL of the records of 2000 ex-pupils of M.D. schools—that is, educable mentally defectives—for here the figures were 13 per cent. The much smaller influence of heredity in low-grade cases is also noted in Dr. LEWIS'S investigation for the Joint Committee, but the terms of reference did not include transmission in general. It seems highly desirable that an authoritative inquiry should be held into the causation and prevention of mental defect—a recommendation already made by the medical committee of the Central Association for Mental Welfare.

[1] Mental Welfare, Jan. 15th, 1930, p. 10.

A NATIVE MEDICAL SERVICE FOR SOUTH AFRICA.

IN the report of the Hospital Survey Committee of South Africa, in 1927, it was pointed out that there was approximately only one hospital bed for every 2231 non-Europeans in the Union, and that medical and nursing services were not available for natives living under tribal conditions, except at a few centres. It is not surprising that the witch doctor flourishes among the tribes, and that in Natal native herbalists are licensed by the State at £3 per head per annum. The Committee recommended the establishment of a Government medical service consisting of whole-time medical practitioners, nurses, and health assistants. It is suggested that the health assistants shall be natives who have reached a definite standard of proficiency in male nursing, the recognition of infectious disease, deverminisation of huts, clothes, and persons, and the systematic treatment of malaria and venereal disease; it is not intended, however, that they should undertake anything in the nature of medical practice. The Committee further proposed that the scheme should be run in connexion with Government or mission hospitals wherever possible, to avoid the expense of building new quarters, but the cost would in any case be high. Ultimately, it is intended that medical service shall be supplied by native practitioners, who will not only be more acceptable to the patients, but who can be engaged at salaries lower than those likely to attract Europeans. Unfortunately, there are not yet a sufficient number of native practitioners available, and it is contemplated that inducements might be offered to natives to qualify as medical men, such inducements to take the form of loans and bursaries. Additional expenditure on buildings for training and for hostels would increase the initial cost considerably. Experience, however, in other parts of Africa suggests that the native practitioner, when qualified, is not often content to practise in his home surroundings.

There are several objections to the scheme, other than the financial aspect, which have been stressed[1] by Sir EDWARD THORNTON on behalf of the Union Public Health Department. If put into practice, he writes, the scheme would inevitably affect the livelihood of European practitioners at present working among natives; it is even probable that certain sections of the European population would desert their own doctor for one whom they fancied combined a knowledge of medicine with the art of witchcraft. Nor is it very likely that native practitioners will be content to practise in the bush when it lay in their power to migrate to the towns. Col. THORNTON has an alternative suggestion, which, although he admits it to be less sympathetic to native aspirations than that proposed by the Committee,

[1] Journal of the Medical Association of South Africa, Sept. 13th, p. 507.

would go a long way towards meeting the urgent needs of the native population, or so he believes. He proposes that the European district surgeon should be made the head of the organisation in his area, and should be responsible for supervision of the health centres. Male natives should be trained as health assistants, and females as nursing aids, to carry on their work under the direction of the district surgeon. The ultimate aim would be the revocation of licences issued to untrained native practitioners, and the abolition of practice by native medicine men. A certain amount of license would have to be allowed, Col. THORNTON considers, to these partially trained assistants in prescribing for minor ailments. The dangers of such a course are obvious. A highly trained European nursing sister is liable to fall into errors of diagnosis through lack of medical knowledge, and it is doubtful if a faulty service is much better than no service. The Trained Nurses' Association, however, has expressed readiness to welcome a lower grade of women to be known as nursing aids, who shall undertake nursing assistance in rural areas. It is suggested that a training school should be opened at Durban, preferably under missionary auspices; Col. THORNTON estimates that if the American Board of Missions undertook the control of the scheme, the cost to the State would be not more than £10,000 yearly, provided that fees were paid by the patients wherever possible, and that bursaries were made available from the Native Development Fund. Health centres, he considers, should be established by preference in areas where natives undertake to build and keep in repair the necessary huts—the cost of equipment and staff falling on the Government. The advantages of this scheme lie in the comparatively small cost, and the speed with which nursing, medical, and midwifery aid could be brought to the native population in outlying districts.

ANNOTATIONS

OCCUPATIONAL THERAPY FOR PHYSICAL DISEASE.

MUCH has been heard lately about the importance of occupational therapy for mental disease, but less is written in this country about its value in all kinds of illness and convalescence. As applied in most institutions at present it is still in the somewhat amateur form that characterised occupational therapy in mental hospitals 20 years ago. Wise nurses give their patients little tasks to perform, and convalescent homes and like institutions provide unexacting games and sports. At the Toronto General Hospital occupational therapy has become a very important routine feature. The regular staff of the hospital includes assistants known as "aides" who have had a special two years' course in their subject, including instruction in anatomy, physiology, hygiene, psychology, and all kinds of handicrafts and remedial exercises. These aides work in close coöperation with the doctors, both in the wards and in the workshops. The hospital provides the materials and takes any profits from sales of finished goods. On the whole it is found better not to allow the patients any percentage of profits, as this makes them want to work at the more paying handicrafts instead of those peculiarly suited to their illness. For patients who do not need hospital care the work has been organised by the Ontario Society of Occupational Therapy, which obtained a charter in 1920. This society maintains a workshop where patients work under a doctor's prescription. Here the cardiac, arthritic, or nervous patient can be useful, self-respecting, and wholly or partly self-supporting, and patients with special disabilities can be set to do interesting work which will exercise just those particular muscles which need to be brought into play. For example, a marked improvement was obtained in an arthritic hand by making flowers out of beads and wire; a man with a badly injured wrist gradually restored it by working a shuttle on a weaving loom, and the value to the restless or depressed patient of regular constructive work needs no emphasis.

Three important results were obtained in London from an experiment of this kind at the Royal Free Hospital. The first was the mental benefit, which, of course, was anticipated. The second was the physical benefit; it was found that return to work was accelerated far more effectively by occupational therapy than by any kind of physiotherapeutic treatment. A man with a stiff elbow would be set to sawing and planing under a skilled carpenter; or a man with a dislocated shoulder would be set to sand-papering bed-table surfaces, raised each day a little higher until he was working above his head. The third value of the work, which was quite unexpected, was the remarkably effective test it provided for the malingerer or case with psychological retardation of recovery. The man who was genuinely keen to get back to work welcomed the occupational clinic with enthusiasm and reported his daily progress with pride. The man who did not want to return to work grumbled at the clinic and said it did him no good, but generally returned to his job quicker than he would otherwise have done, since he found his treatment "too much like work." Occupational therapy has therefore not only the obvious merit of leading a man gently across the bridge from complete idleness to full work, but might also prove a considerable economy to the country in sickness benefit. As a commercial proposition the work needs subsidising, for there is undoubtedly a difficulty in selling the goods made under these circumstances. Here a well-organised voluntary society, like the Toronto one, could be a great help, but apart from voluntary aid insurance companies might well find expenditure of this kind an economy.

There is at the present time some difficulty in obtaining assistants trained in occupational therapy. It is a branch of physiotherapeutic work which demands considerable ability and intelligence and should make a special appeal to educated women. There is an excellent opening for a physiotherapist who will start a centre for private patients. A room divided into 10 or 12 cubicles would serve a great number of patients coming by appointment for a certain number of hours a week, according to their doctor's prescription, to work at the loom, the carpenter's bench, the jigsaw-puzzle bench, the potter's wheel, or any of the various kinds of handicraft. It is, however, of the utmost importance that the work should be directed by the medical man and that the profession generally should take a discriminating interest in the anatomical and physiological principles

underlying the restoration of function, and in the particular variety of work or play best suited to bring about the desired result.

PERFORATED PEPTIC ULCERS.

In a paper on Acute Free Perforation of Gastric and Duodenal Ulcers Dr. C. Semb [1] gives figures suggesting that the behaviour of the perforated gastric and duodenal ulcer has changed in some respects even in the course of a generation. His material consists of 166 cases treated at the Ullevaal Hospital, in Oslo, between 1912 and 1929. The ulcers were duodenal in 36·5 per cent. and gastric in 63·5 per cent. Women were represented only by 31 cases, the proportion of men to women being, accordingly, 4 to 1. Brunner's important statistical work, published in 1903, showed a very different ratio, only one-third of the patients being males. In 1911, Petrén showed that the sexes were about equally represented, and this finding was confirmed in 1915 by Shoemaker. Subsequent statistics have shown a steady fall in the relative incidence of perforating ulcers in women. The relative and absolute increase in the number of cases in men has been attributed by the Swede, Bager, to the increased consumption of cigarettes by young men, while German authors have connected it with an alteration in the diet since the war, notably an increased consumption of meat. The age-curves of Semb's cases showed marked sex differences; whilst in women this condition was fairly evenly distributed in the various age-groups, with only a slight preponderance between the ages of 20 and 50, the men showed an accumulation of cases between the ages of 20 and 29 and, to a less extent, between 30 and 39. While the incidence of the acute perforating ulcer in women does not seem to have changed in the period under review, it has increased greatly in the case of men. The 26 deaths (total mortality of 15·7 per cent.) were distributed in such a way as to show how important are two factors—namely, the patient's age and the length of the interval between perforation and operation. The mortality rose from 5 per cent. between the ages of 20 and 30 to 14 per cent. between 30 and 40, reaching 40 per cent. in the case of patients over the age of 70. The position also of the perforating ulcer seemed to influence the mortality, and the juxta-pyloric ulcer, with only 13 deaths among 127 cases (10·2 per cent.), showed the lowest mortality. While the mortality was 25·8 per cent. for the women it was only 12·7 per cent. for the men. As for the length of the interval between perforation and operation, none of the 48 patients coming to hospital within six hours of perforation developed peritonitis, and the single death in this group was due to pneumonia. Nine of the 112 patients treated within 12 hours of admission died; and this mortality of 8 per cent. rose to 18·4 per cent. in the case of the 38 patients operated on from 12 to 24 hours after perforation. One of the most encouraging features of this investigation was the high proportion of complete recoveries observed more than a year after the operation. It was found that 75 per cent. had got rid completely of their pre-perforation dyspepsia, and could tolerate all kinds of food. Further, improvement was effected in 19·4 per cent., the patients still being liable to slight dyspepsia or intestinal symptoms, but not being greatly troubled by them, and recovering when dietetic precautions were taken for a time. So it was only in 5·6 per cent. that no cure could be claimed. The treatment in the overwhelming majority of cases consisted of suture with gastro-enterostomy and flushing out of the peritoneal cavity through a criss-cross incision in the right iliac fossa. With such good results from simple suture and gastro-enterostomy, Semb is not inclined to recommend the comparatively severe operation of resection except for such special indications as a bleeding ulcer or a suspicion of cancer.

[1] Acta Chir. Scand., Sept. 1st, 1930.

MOVEMENTS OF THE EYES IN READING.

It was thought at one time that in reading the eyes move backwards and forwards smoothly and continuously and perception of the words takes place during the movement. But so long ago as 1878, as is pointed out by Miss M. D. Vernon,[1] Javal observed that this is not so. As the result of his observations and those of several more recent writers, it is now known that during reading the eyes move with a series of rapid jerks, with a pause after each movement during which the eyes are relatively at rest. On reaching the end of a line the eyes move smoothly to the left to the beginning of the next line. Only during the pauses which occur while the eyes move from left to right does perception take place, and the number of pauses varies greatly according to the age and reading experience (it is better to use this phrase than the word "education") of the subject of experiment, the practised reader being able to take in the sense of what he is reading with many fewer fixative pauses than the unpractised. In addition to the forward movements it is found that there are frequent movements of regression, especially with children and slow readers, who, as one would expect, take longer to perceive the meaning of a word or group of words than the older and more practised reader, but he too may have many regressions when reading an unfamiliar language or with his mind fixed on the style or spelling rather than on the context, as in proof-reading. The number of words covered by a fixation varies greatly, familiarly associated words and well-known phrases being read at a single fixation. The time occupied by the inter-fixation movements is very short compared with that occupied by the fixation pauses, probably not more than one-tenth, the rate being so great as to render it impossible for any perception to take place during movement. An interesting observation of L. Dor, of Lyon, quoted by Miss Vernon, shows that the causation of the movements is reflex, depending on stimulation of the peripheral part of the retina in the direction in which the eye is moving. The case was that of a woman with loss of the right half of the field in the right eye and such a degree of amblyopia in the left eye that with the left eye alone she was unable to read. When the left eye was occluded she was unable to read with the right, but when both eyes were open the stimulation of the retina of the left eye, although powerless to enable the left eye by itself to read, was yet sufficient to act as a stimulus to the right eye to move to the right and reading became possible.

In a further report lately published under the auspices of the Medical Research Council [2] Miss Vernon returns to the subject and describes a somewhat elaborate apparatus by means of which these movements can be studied by photographing a beam

[1] Brit. Jour. of Ophthal., March, 1928, p. 130.

[2] The Movements of the Eyes in Reading. H.M. Stationery Office. 1930. Pp. 45. 9*d*.

of light reflected from the cornea on to a continuously moving film. Experiments were carried out on nine subjects in the Psychological Laboratory at Cambridge. It was found that voluntary movements of fixation were performed accurately in only 20 per cent. of cases, on the average. There was a tendency, increasing with the angle of movement, for the eye to stop short of the correct point by an angular distance of the order of 1°, but occasionally it went too far. Return movements in reading from the end of one line to the beginning of the next were often either too short or too long. As might be expected, the rate of reading and the number of regressions for any individual subject of experiment varied greatly according as the matter read was such as to excite his personal interest or not. Fatigue in reading is chiefly due to the eye movements, whether they are of too small an angle necessitated by small print, each movement requiring to be more accurate than when the print is large or whether the backward movement from one line to the next is too long. It is said that lines of print not more than 8·5 cm. in length are the least fatiguing to the eyes.

THE LATE PROF. GLEY.

By the death of Marcel Eugène Emile Gley, in Paris last month, France has lost one of the most distinguished workers in physiology. Born 73 years ago in Lorraine, Gley was educated at Nancy, and later studied at Montpellier. He migrated to Paris and became assistant to Charles Richet in the department of physiology in the Faculty of Medicine. Later he was appointed to the Chair of Biology in the Collège de France, an office which he held until his death. His work on the influence of peptones on the blood and liver, and above all his studies on the ductless glands, particularly the thyroid and parathyroid, gave Gley an international reputation. During the 'nineties over 40 publications on these glands are to be found in the *Comptes rendus de la Société de Biologie* and the *Archives de Physiologie*. Many workers from foreign lands came to work in his laboratory in the Collège de France. Last July the Institut de France awarded him the Osiris Prize in Physiology, and all arrangements had been made for its presentation.

"A.O."

Prof. Raikichi Arima, who directs the institute for experimental medicine known by his name in Osaka, Japan, remarks[1] that there are two ways of fighting tuberculosis. One is by dispensaries, sanatoriums, isolation of infectious cases, and so forth. The other is by the immunisation of the young against the disease. The first method, he says, has already proved to be not only too costly but unattainable, so that we are thrown back on the second method, with which in the West the names of Calmette and Guérin are associated. He recalls the remark of Prof. B. Lange at the Lübeck inquiry:—"I am convinced that in the tuberculosis campaign use must be made of every means, in itself harmless, from which there is any expectation of result." Medical practitioners are meeting every day human beings who are no longer susceptible to tuberculosis owing to having lived in a tuberculous milieu; it has been the aim of Prof. Arima and of his co-workers, Aoyama and Ohnawa, to imitate the example set by nature. The vaccine which they call A.O. is prepared from an antigen which immunises guinea-pigs and rabbits against an infection with highly virulent tubercle bacilli. It consists of bacterial protoplasm from many strains of the human type of tubercle bacillus, absolutely non-pathogenic because it is incapable of germination, easily measurable biologically, and easily absorbable, for the lipoid and fat content of the bacilli has been removed by the addition of a saponin derived from a species of sapindus, native to Japan. The vaccine has been used in prophylaxis, treatment and diagnosis. An injection of A.O. in a tuberculous patient reduces the leucocyte count after 30 minutes—the "Yoshida" reaction, which is held to be characteristic of active disease. After prolonged test on animals, A.O. was given to four volunteer tuberculous doctors, on whom its harmlessness was demonstrated. In 1927 the vaccine was recognised by the Japanese Government as a harmless product, and from 1927 to 1929 something over 150,000 persons were inoculated with it. Prof. Arima gives the result of 155 answers to a questionaire in which the percentage of cases cured or improved is never less than 53 (for severe pulmonary tubercle), and is as high as 96 for slight pulmonary affections, and 100 for tuberculosis of the skin. At an elementary school 413 children were inoculated, with the result that they lost their tendency to catch cold, to cough and sweat at night, and to glandular swelling; and an improvement was evident in appetite, nutrition, complexion, spirits, and general condition. In many cases, he says, it would be correct to speak of a change of life (*Lebensumschwung*). Confirmatory experience has appeared in the German medical press following an address by Prof. Arima at a recent Naturforscher und Aerztetag.

[1] Tuberkulose-Schutzimpfung mittels A.O. Forschung und Fortschritte, Nov. 1st, p. 410.

TREATMENT OF ACUTE RHEUMATIC FEVER.

The usual treatment of rheumatic fever is not supposed to have much, if any, effect on the more serious manifestations of the disease. Salicylates have strong antipyretic and anti-arthritic properties, but subcutaneous nodules may develop in patients under the full influence of these drugs, and their power to prevent carditis is by no means easily demonstrable. The search for other remedies, therefore, continues. Some time ago Small[1] claimed that serum prepared by inoculation of animals with *Streptococcus cardio-arthritidis* is able to arrest the progress of the disease, and Hitchcock, McEwen, and Swift[2] now report that they have carefully investigated these claims. In a series of cases exhibiting various rheumatic manifestations they used three types of antistreptoccocal serum—viz., a commercial antiscarlatinal serum, a sample serum supplied by Small himself, and a serum prepared by the inoculation of a heifer with a green-producing streptococcus isolated from a subcutaneous rheumatic nodule. In none of these cases were unequivocal results obtained to show that the serum had produced any benefit; on the other hand, undesirable reactions following the serum were noted in 23 out of the 26 cases. Success, of even mild degree, could be claimed for the treatment in only 6 out of 20 cases which were properly controlled, and in none of these was the improvement more than what may follow simple rest in bed. Although the number of cases observed is small it seems fair to conclude that a general adoption of antistreptococcal serum in the therapy of rheumatic fever is by no means justified. As

[1] Small, J. C., Amer. Jour. Med. Sci., 1927, clxxiii., 101.
[2] Hitchcock, C. H., McEwen, C., and Swift, H. F., Ibid., October, 1930, p. 497.

regards salicylates, Leech[3] has recently published observations on 67 children, the subjects of actual or potential rheumatic heart disease, to whom this remedy, in the form of aspirin (grs. 20 daily) was administered over periods of six months. The children chosen were those showing no obvious evidence of rheumatic activity. Not only did they show fewer relapses and gain more weight than those in a control series, but also the signs of established cardiac lesions diminished in more of the treated than the untreated group.

THE NOBEL PRIZEMAN IN MEDICINE.

THE Nobel Prize for Medicine for 1930 has been awarded to Dr. Karl Landsteiner, formerly of Vienna, and now of the Rockefeller Institute for Medical Research in New York. His name is best known in connexion with his work upon the blood groups, and it may be truly said that he laid the foundations of all present knowledge of this subject. Since the work of Shattock in 1899 it had been recognised that some human sera had the power of agglutinating other human red cells, but this was regarded as a pathological phenomenon. Working in 1900 and 1901 Landsteiner not only showed that agglutination of human red cells could be brought about by other human sera in the absence of any pathological conditions, but was able to demonstrate that human beings could be ranged in certain groups on the basis of this reaction. Actually Landsteiner recognised what are now known as groups A (II.), B (III.), and O (IV.). In 1902 Decastello and Sturli, following up his work with his approval, demonstrated the existence of Group A B (I). Landsteiner showed that the constitution of the groups could be accounted for by the postulation of two agglutinable substances or (as they are now called) agglutinogens resident in the red cells and two homologous agglutinins resident in the sera. He believed that the agglutinins were reciprocal to the agglutinogens, but this has since been proved not to be so. His discovery was allowed to remain almost unnoticed for years, although he specifically pointed out its possible applications both in the practice of blood transfusion and in the determination of paternity. The late war, with its great increase in the practice of blood transfusion, brought his work into notice and proved the correctness of his opinions on this subject; but only within the last few years has the truth and importance of his views on hereditary transmission of the agglutinogens become generally recognised.

THE VOLUNTARY HOSPITALS OF LONDON.

ONCE more the Statistical Review of the Work and Finance of the London Hospitals, which has just been issued by King Edward's Fund, is full of encouragement. Its financial and vital statistics, which cover the year 1929, suggest that, so far as the capital is concerned, the voluntary system is meeting the ever-growing strain upon it. All the figures have gone up—there are more beds, more patients, more expenditure, and more income. There has been no aggregate deficit since 1926, and although the aggregate surplus last year was smaller than in 1927, it was nearly three times as large as in 1928. Only in one direction are the figures lower. The number of new out-patients has fallen by 4000, which is probably accounted for by the physical limitations of the out-patients' departments which, broadly speaking, will not hold any more. On the other hand, the attendances of this smaller number of patients of the 138 hospitals under review have increased by 84,000, which is clearly attributable to the larger course of treatment in such departments as light and massage, required by many patients. How much the pressure upon out-patients' departments has grown is made plain by the increase of 1,154,000 attendances since 1925. Selective methods may reduce the actual growth of out-patient totals, but the constant introduction of new forms of treatment is certain to augment the attendances, and it is significant that while out-patients have increased by only 11 per cent. during the last half decade, their attendances have increased by 21 per cent. The experience of the great provincial hospitals is probably not very dissimilar.

Looking at the comparative figures of the last five years we find that 1810 beds have been added to the metropolitan hospitals during that period, to which 1929 contributed 380, the smallest increase since 1926, and a heavy falling-off from the year before. In view, however, of the cost of such extensions the addition of no more than a fraction over a bed every day instead of a bed and three-quarters, is not gravely discouraging. A "boom in beds" cannot be expected every year. That these 380 new beds only just met the demand is shown by the curious coincidence that the average number occupied increased by exactly that figure. In the report of an inquiry which King Edward's Fund recently made into the causes, incidence and extent of vacant beds, it is pointed out that any improvement in the percentage of beds occupied would, in effect, be as valuable as the building of additional bed accommodation. The difficulty of keeping beds as fully occupied as possible, and at the same time of keeping a proportion available for emergencies, confronts most hospitals daily, but the report shows that the larger and the special institutions work up to approximately 90 per cent. of their capacity in those beds over which any effective control can be exercised. Those which are most frequently empty are "pay beds" chiefly because their availability is at present insufficiently known. With an increase of 10,900 in new in-patients last year, making a growth of 38,000 since 1925, the rate of increase in the beds occupied was higher than the rate of growth in the bed complement. Happily, as in-patients have increased, their average period of residence has fallen in the quinquennium by a whole day.

Another, and equally happy, circumstance in a different sphere is that, at £3,600,000, the maintenance income of the metropolitan hospitals in 1929 was a record, with an increase of £168,000 over the preceding year. Most of the improvement was, however, due to the uncertain element of legacies, though receipts from patients were more by £78,000. The growth of this source of revenue may reasonably be expected in the future to offset at the least the fall in donations. Over the whole period, however, there has been a large increase in voluntary gifts. To such gifts the hospitals still look for about one-half of their expenditure, which last year amounted to £3,550,000. Increased work is accountable for some four-fifths of the growth in expenditure since 1925. In addition to the maintenance receipts, £220,000 was given for endowment and £865,000 for buildings and equipment; thus, the total receipts of the 135 hospitals last year reached the total, again a record, of £4,685,000. There could be no better proof of the solid progress that is being made with the allied problems of maintenance and expansion.

[3] Leech, C. B., Jour. Amer. Med. Assoc., Sept. 27th, p. 932.

A SUCCESSFUL ANTITUBERCULOSIS SCHEME.

SHEFFIELD has a tuberculosis scheme whose success (see p. 1039) is attributed to complete coöperation on the part of general practitioners in the town. In Sheffield there has never been any voluntary tuberculosis association, and the whole of the scheme has been built up under the ægis of the public health department, which has aimed from the beginning to enlist the practitioners' help. Effort has been made to obtain the services of tuberculosis officers with special clinical experience, whose opinion in a consultant capacity would be of real service to the family doctor. Since 1913 observation beds have been in use to facilitate diagnosis in doubtful cases, and for the same reason a modern X ray apparatus was installed at the dispensary in 1919. Practitioners have been encouraged to send doubtful cases to the dispensary for examination, and the tuberculosis officers are prepared to see patients at home in consultation with their own doctor. Care is always taken to give the doctor full information about his patient after examination and after discharge from hospital. The provision of institutional beds is so generous that when a practitioner has a patient likely to be benefited by hospital treatment there is no delay in his admission. At present the beds number over one per thousand of the population, without counting the King Edward VII. Hospital for surgical tuberculosis. In the early days patients were sent to outlying sanatoriums and a site for a municipal sanatorium was sought at a distance from Sheffield. Now, however, the principle has become established of having all the hospital beds within easy reach of the city. Most of them are close to a tram terminus or within an easy 'bus ride. When relatives are able to visit patients twice a week admission to hospital becomes more popular and there is less need for persuasion in the part of the practitioner. Special point has been made recently of providing beds for children with hilum tuberculosis, with the idea of so increasing their resistance as to prevent the onset of acute tuberculosis in later life; there is certainly little of the latter in Sheffield. All forms of tuberculosis are now being brought within the ken of the dispensary at an earlier stage. When King Edward VII. Hospital was first opened all the 130 beds were occupied by cases from Sheffield itself, many of them advanced cripples. At the present time only about 80 of these beds are needed for Sheffield and the cases come under treatment before crippling has become advanced. The other beds are available for the use of the surrounding districts. The scheme which we have sketched out is one to inspire confidence, and it is not exaggeration to say that the Sheffield scheme is based on the confidence of the local medical profession.

SILICOSIS IN THE POTTERY TRADE.

THE suggestion [1] that the problem of silicosis is becoming urgent in various industries carried on in this country is supported by a Home Office memorandum addressed to those concerned with the pottery industry. It states that since the Various Industries (Silicosis) Scheme came into force in February, 1929, no less than 113 cases, including 54 deaths in this industry, have been reported to the medical inspectors, and the adoption of further precautions for the prevention of silicosis are held to be required. Draft regulations embodying the proposals of the Departmental Committee on Workmen's Compensation for Silicosis in the Pottery Industry have now been drawn up. Since they are the outcome of careful inquiry, the Home Secretary hopes that they will be accepted without question. But it will be open to occupiers, workpeople, or others affected to lodge objections, and any objections of substance will be considered before the regulations are finally made. The proposals of the committee include extensions of the requirement as to exhaust ventilation; more effective measures for cleaning potters' shops, including the provision of impervious floors and shelves or other accommodation for moulds; and extension of the requirements as to overalls and head coverings, cloakroom and messroom accommodation, and lavatories. In No. 10 of the draft regulations, restriction of certain tasks, such as the cleansing of the floors of potters' shops and scouring shops, to an "adult male" suggests that evidence exists that women and adolescents are more liable than grown men to contract silicosis. In the gold-mining industry no women are employed, so that experience there cannot be the source of this regulation. Regular medical inspection of the exposed population, and especially rigorous inspection of candidates for employment, is one of the measures most relied on in South Africa, and we note with satisfaction that the Home Secretary proposes to make provision for examinations by a medical board, set up under the Workmen's Compensation (Silicosis and Asbestosis) Act of last session, for workers in certain pottery processes. The annual report for 1929 [2] of the Miners' Phthisis Medical Bureau on the Rand gives figures which are not easy to interpret for anyone not familiar with the methods of analysis to which they have been subjected; but evidently satisfaction is felt with the progress made in preventing the incidence of the disease in "new" Rand miners—that is, those men who have worked underground only since 1916. The fact that the disease takes a long time to develop, and that every year the number of men classed as new Rand miners is increased by recruits to the service, makes the statistical presentation of the ascertained facts exceedingly complicated. But the chief lesson taught by this amazing record of the organisation built up to cope with the ravages of silicosis is that the utmost effort must be made to prevent the scourge from making further invasions into the industrial life of our own country.

[1] THE LANCET, Nov. 1st, p. 962.

PRACTITIONERS AND MENTAL TREATMENT ACT.

MEDICAL practitioners who wish to be approved by the Board of Control for the purpose of making recommendations in respect of voluntary patients below 16 years of age and temporary patients (under various sections of the Mental Treatment Act, 1930) can obtain the necessary form of application by writing to the Board at Caxton House West, Tothill-street, London, S.W., marking the envelope "M.T.D." in the top left-hand corner. As the Act comes into operation on Jan. 1st, 1931, intending applicants are asked to write for this form immediately. The Board states that it cannot entertain applications from medical practitioners of less than five years' standing on the Medical Register.

THE next session of the General Medical Council will commence at 2 P.M. on Tuesday, Nov. 25th, when the President, Sir Donald MacAlister, will take the chair and give an address. The Council will continue to sit from day to day until the termination of their business.

[2] 1930. Pretoria Union of S. Africa Government Printer. Pp. 64. 3s. 6d.

MODERN TECHNIQUE IN TREATMENT

A Series of Special Articles, contributed by invitation.

CCCX.—NEONATAL ASPHYXIA.

PART I.

THE treatment of the asphyxiated new-born baby has undergone radical changes in recent years. Gone are the days of barbaric violence when deeply shocked infants with white asphyxia were waved over the operator's shoulder as in the "Schultze" method, or, as suggested by Byrd, bent double and then extended, thus frequently being killed by increased shock and rupture of the liver. I am satisfied that the baby with white asphyxia is never saved by artificial respiration in the ordinary sense of the words. An infant with white asphyxia who is receiving artificial respiration may breathe and recover. But this, though probably claimed as a triumph for the methods of violence, should really be regarded as a somewhat remarkable recovery despite the added trauma to which the child had been subjected. There is some danger nowadays of going to the other extreme by attempting to replace the old violent methods by others too complicated, or needing too much in the way of elaborate and expensive apparatus, to be of any use to the practising obstetrician. For example, an apparatus used in an American institution provides an airtight cabinet wherein the asphyxiated child is placed with only its head outside. The air in the cabinet is then partially exhausted by an electric pump about 15 times a minute and thus atmospheric air is sucked through the ordinary air passages into the child's lungs. Thence it is expelled when the air-pressure in the cabinet is allowed to return to normal. There appears to be no doubt about the efficacy of this apparatus in making asphyxiated infants breath. The fault appears to be, on the contrary, that children with extensive intracranial hæmorrhages are caused to breathe though they are doomed to subsequent death as the result of the head injury. But apart from this disadvantage the apparatus is quite impossible to provide except in large maternity institutions. A somewhat less complicated machine has been described and used in this country by Prof. Louise McIlroy; the child is kept warm in a box with an atmosphere of 6 per cent. carbon dioxide in oxygen. But the advantages to be gained from such an apparatus would seem to be hopelessly outweighed by the practical difficulties.

The ordinary accoucheur needs a straightforward technique requiring only simple apparatus, and one which he can employ under any circumstances. It is necessary to distinguish between the methods suitable to the "blue baby" and those required for cases of asphyxia pallida in which the child is white and limp.

Blue Asphyxia.

First with regard to "blue babies"—those suffering from "asphyxia livida." It may at once be stated that these infants are comparatively difficult to kill and artificial respiration need not be regarded as necessarily a murderous procedure. But preferably treatment such as that subsequently to be outlined should be used. And for such treatment it will be seen that some form of mucus extractor is essential. It must be emphasised that clearing the upper air passages is the first essential in the treatment of all cases of asphyxia in new-born babies, and further, that a suitable extractor forms an integral part of the obstetric equipment of every person attending a confinement. The type to be employed must also possess, not a metal end, as is so frequently illustrated, to go down the child's throat, but a soft rubber one which will cause no injury to the delicate tissues of the infant.

The procedure, then, to be adopted in the case of a baby with blue asphyxia is as follows: wipe all mucus, &c., away from the nostrils with a soft mop of gauze or cotton-wool. Wipe the mucus out of the child's mouth with a small piece of soft gauze twisted around a little finger (gauze is better than wool for this purpose since it is less likely to slip off the finger). Do not be in a hurry to separate the child from the mother—it is quite unnecessary to clamp and divide the cord at this stage. Pass the soft nozzle of the mucus extractor, guided by a little finger, well to the back of the infant's pharynx and suck out all moisture. Repeat the process, directing the nozzle successively to all parts of the mouth, nostrils, and pharynx where mucus has collected until the whole of the upper air passages has been cleared. In all probability the child will now breathe; if not, support the back of the child's chest on the palm of one hand and allow the head to drop slightly back so as to open up a good airway. If necessary, hold the tongue forward either by a finger and thumb, holding a piece of gauze to give a grip, or by a sharp single pronged clip forceps such as a "towel-clip," or by means of a suture passed through the tongue with a fine needle; rub some brandy gently with a little finger on the gums and on the inside of the lips and cheeks; compress the thorax gently with a hand and then allow the recoil to inspire air into the lungs. Repeat this manœuvre slowly—certainly not more often than six times a minute—and gently.

Even smacking the blue baby or stimulating it by splashing a little cold water on its skin will probably do no harm, and usually such infants will respond fairly quickly to the treatment described above and will start breathing normally. Then they can be separated from the mother in the usual manner. But should normal respiration not easily be established and particularly should the infant gradually change from the state of being blue while its limbs exhibit good muscular tone, into the condition of limpness associated with pallor, then it is essential that the treatment appropriate for white asphyxia should immediately be adopted. It is because of this danger of change from blue to white asphyxia that any violent movements such as those of artificial respiration are to be deprecated even in the treatment of the milder condition, otherwise in consequence of such violence this condition may become changed into the more serious one.

Before leaving the subject of blue asphyxia mention should be made of a suggested line of treatment by allowing some fœtal blood to escape by dividing the umbilical cord. It is claimed that by thus relieving the circulation the embarrassed fœtal heart is enabled better to function and that the respiratory centre, in receipt of a more efficient blood-supply, is thus enabled to initiate normal respiration. This, of course, would not apply to cases of "asphyxia pallida"; and even in blue babies the loss of blood to the circulation does not seem to me to be advisable. I have consequently had no experience of this line of treatment.

LESLIE WILLIAMS, M.D., M.S. Lond., F.R.C.S. Eng.,
Surgeon to Out-patients, Queen Charlotte's Hospital.

SPECIAL ARTICLES

MEDICINE AND THE LAW.

Post-mortem Examinations.

IN dealing with matters which fall under this section of medical practice, the propriety of a post-mortem examination, and, generally, of the circumstances when autopsies are indicated, frequently have to be discussed. The statutory provisions governing post-mortem examinations are to be found in the Coroners Act, 1887 (50 and 51 Vict., c. 71), Section 21, and the Coroners (Amendment) Act, 1926 (16 and 17 Geo. V., c. 59), Sections 21–4. The 1887 Act was in part a consolidating Act, and restated existing law.

But an important change was made in 1926 which enabled a coroner to have a post-mortem examination without necessarily proceeding to hold a formal inquest, and questions on the subject are often put to us. The statistics showing the extent to which this concession has been employed are not yet complete. The 1926 Act was in operation for eight months only of the year 1927, since it did not take effect till May 1st, 1927. The annual criminal statistics down to 1927 showed the numbers of deaths reported to coroners, the number of lunatics and persons in institutions where a post-mortem examination is always made, the number of deaths investigated by a coroner where no inquest was held, the number of inquests and the number of post-mortem examinations ordered by the coroner. Since the operation of the 1926 Act the statistics show the number of post-mortem examinations "directed or requested" by the coroner, and this total is subdivided into "inquest cases" and "non-inquest cases." For the year 1927, when 60,511 deaths were reported to coroners, the eight months' figures of post-mortem examinations directed or requested by coroners were 12,904 in inquest cases and 3616 in non-inquest cases. For the year 1928, when the total of deaths thus reported was 62,501, the post-mortem examination figures were 11,127 in inquest cases and 6791 in non-inquest cases. The non-inquest figure, it will be noticed, was more than doubled at the end of the second year of the full working of the change introduced by the 1926 Act. The figures for 1929 will not be published till the official volume of Criminal Statistics for England and Wales of that year appears; it is not to be expected before next year. In the meantime the Home Office has stated that in 1927 there were 24 boroughs and 5 counties in which no use had been made of the new power; in 1928 there were 21 boroughs and 7 counties. The saving of time, trouble, and expense by having a post-mortem examination without necessarily having an inquest is so conspicuous that the power is likely to be constantly more freely used. It may be added that the coroner is now remunerated by the year and not by the inquest, and that adequate fees are ensured (by Section 23 of the 1926 Act) for medical practitioners who hold post-mortem examinations and give evidence at inquests.

Birth Registration Offence: Story of Suppositious Child.

A woman was convicted at Sunderland recently on a charge of perjury in respect of registering the birth of a child. The case put forward by the prosecution was remarkable. The accused, a married woman 37 years of age, was said to have adopted an illegitimate child and to have passed it off as the offspring of herself and her husband. The child was produced in court and was identified by a widow whom, in the light of the magistrates' decision, one must regard as the actual mother. The widow stated that the child was born to her on Jan. 15th, and that on March 25th she advertised for someone to adopt it. According to the prosecution, the accused bought long clothes for the baby, and had it brought to her own house by night on April 18th; the real mother came to the house every morning for a fortnight, ostensibly to attend to the accused and the child; she was addressed as "nurse." A medical practitioner happened to be attending the accused for pleurisy; she took advantage (it was said) of this circumstance to represent that he was attending her in her confinement. A note bearing his name was sent to the medical officer's office to notify the birth as having occurred on April 18th—the date when, according to the prosecution, the three-months'-old child was conveyed to the house. The doctor repudiated the note. His evidence was that, during his visits to the accused, she told him she was pregnant, but declined to let him examine her. On April 19th he was sent for and found her in bed with a child all wrapped up; she said she was all right, and that nurses were attending her. Accepting her story, which there was apparently no reason to suspect, he subsequently signed a certificate enabling her to obtain maternity benefit. The chief inspector of police said he obtained from the accused the name of the woman who was attending her, but he was unable to trace any such person. The accused had the child christened in her own name, and she registered the birth stating it to be the child of herself and her husband. On the other side the defendant flatly denied the story of the adoption. Her husband and neighbours gave evidence in support of her statements that the child was born to her on April 18th. Having found her guilty, the magistrates fined her £10. This was the maximum on summary conviction until in 1925 the penalty was increased to £50. Had the charge been sent to the assizes for disposal—and such disputed issues of fact might well be thought more appropriate for decision by a jury—the maximum sentence would have been seven years' penal servitude.

In 1926, when the law of death certification and registration was amended, critics complained that there was still every opportunity left for premature burial and every facility for the concealment of crime. Irregularities in connexion with the registration of births are perhaps not so serious as those with respect to deaths, but the Sunderland case suggests that here, too, the law may require re-examination. The medical practitioner is not primarily responsible either for notifying or for registering a birth, but existing statutes put upon him an indirect or secondary responsibility. He would be closely concerned in any proposed change.

Medical Privilege Again.

The difficulties of the medical practitioner who is asked in the witness-box to disclose matters of professional confidence were illustrated afresh lately in the King's Bench Division. A practitioner from University College Hospital (subpœnaed to give evidence) asked for the protection of the judge on the

ground that his testimony concerned matters privileged as between doctor and patient. Mr. Justice Macnaghten replied that there was no such privilege known to the law and that the witness was bound to answer any relevant question of which he had knowledge. Counsel interjected a remark that the witness was putting forward the view of the hospital authorities, whereupon the judge professed astonishment that the hospital authorities should be so ignorant of their duty. Hospitals, we may guess, are not only concerned with professional etiquette but also dislike the disturbance of medical and surgical services which occurs if their staffs are summoned to spend what may be many hours in the law courts. Legally they are powerless to protest. If a hospital refuses to send a witness, the court can direct the whole personnel of the hospital to attend. This potential threat was held over a hotel manager lately when he showed reluctance to allow his domestic staff to appear as witnesses in divorce cases; it was explained to him that the whole staff of the hotel might be ordered to attend if he made any difficulty.

On the question of medical privilege and the protection of a patient's confidence, the fact that a judge insists on having the evidence should not deter the witness from making his protest. There is a widespread feeling that medical privilege should receive statutory recognition in the interests of patients in general. This change will not be brought about unless public opinion is stirred. It is necessary to keep the matter before the public; every practitioner who protests against being asked to disclose his patient's confidences does good service for this purpose.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

SCIENTIFIC COMMITTEE FOR MEDICAL INVESTIGATION.

A SCIENTIFIC Advisory Committee on Medical Administration and Investigation has been appointed by the Secretary of State for Scotland. The reference to the Committee is: "To assist the Department of Health for Scotland in applying the results of scientific research to the details of public health administration and in promoting such medical investigations as come within the sphere of the Department or of the local authorities in Scotland." The members of the Committee are as follows:—

Mr. Alex. Bowman, D.Sc., Scientific Superintendent of the Marine Laboratory of the Fishery Board for Scotland.
Dr. C. H. Browning, F.R.S., Professor of Bacteriology in the University of Glasgow.
Dr. E. P. Cathcart, F.R.S., Professor of Physiology in the University of Glasgow.
Dr. F. A. E. Crew, Professor of Animal Genetics in the University of Edinburgh, and Director of Animal Breeding Research Department.
Sir Walter Fletcher, M.D., F.R.S., Secretary of the Medical Research Council.
Sir Robert Greig, Secretary of the Department of Agriculture for Scotland.
Mr. John Jeffrey, Secretary of the Department of Health for Scotland.
Dr. J. Parlane Kinloch, Chief Medical Officer of the Department of Health for Scotland.
Dr. A. S. M. Macgregor, Medical Officer of Health for Glasgow.
Dr. T. J. Mackie, Professor of Bacteriology in the University of Edinburgh.
Dr. J. J. R. Macleod, F.R.S., Professor of Physiology in the University of Aberdeen.
Dr. Robert Muir, F.R.S., Professor of Pathology in the University of Glasgow.
Dr. J. B. Orr, Director of the Rowett Institute for Research in Animal Nutrition, Aberdeen.
Dr. W. J. Tulloch, Professor of Bacteriology in the University of St. Andrews.

Dr. Parlane Kinloch is the chairman of the Committee, and Mr. George Wallace, of the Department of Health for Scotland, is the secretary.

The appointment of the Committee follows on the conference of research organisations which was held in Edinburgh in November of last year. A more intensive use of Scottish research material and the correlating of work in the biological sciences, having a bearing on medical as well as on agricultural, fishery, or other fields, was urged at the conference. It was also urged that a Scientific Advisory Committee would secure for community health purposes the application of the most recent results of medical research.

THE BRIDGE OF ALLAN SPA.

By invitation of the provost and town council of Bridge of Allan and Mr. Holdsworth Lunn, chairman and managing director of the Spa Hotel, a large and distinguished company attended the reopening of this once famous Scottish spa on Oct. 30th. The Scottish Department of Health was represented by Sir Leslie Mackenzie and Dr. Alex. Shearer. In declaring the spa open Sir Humphry Rolleston recalled the establishment of the well-house at Airthrey in 1821 by Sir Robert Abercromby, after a favourable report on the medicinal value of the waters by Prof. Thomas Thomson, of Glasgow. In the middle of last century 30,000–40,000 people visited Bridge of Allan every year to take the waters, but no effort was made to modernise the equipment of the spa. Now, he added, the place had a triple qualification for assured success: great natural advantages in climate, scenery, and associations; exceptional chemical composition of its water; and a fine up-to-date equipment.

Dr. Fortescue Fox said he had not found more than 10 or 12 waters in the world precisely comparable with those of Bridge of Allan. Their total saline strength was about 10 parts per 1000—i.e., nearly isotonic with the body fluids, and thus suitable for drinking, while their calcium content was exceptionally high (ca. 4·5 per mille), and in a highly assimilable form. Llandrindod and Llangammarch in Wales were similar, but were not so rich in calcium (about 1 per mille). Woodhall Spa came nearer (3·5), but was too strong in table salt to be drunk without dilution. Homburg and Kreuznach, in Germany, had about half the amount of calcium. The nearest comparison was with the great springs of Saratoga (New York), used for functional disorders of the stomach, gastric and intestinal catarrh, and constipation; and the United States of America possessed three other waters of this type. Owing to the chloride, calcium and other elements contained in them, the Bridge of Allan waters covered a rather unusually wide range of usefulness in the prevention and cure of illness. The four chief classes which would derive benefit from them were: (1) delicate children, (2) people affected with respiratory and (3) with digestive troubles, and (4) many people suffering from certain forms of rheumatism and other exudative diseases. Mr. Judd Lewis, D.Sc., Chairman of the International Standard Measurements Committee, confirmed the remarkable content of calcium, iodine, and bromine in the spring water.

After the opening ceremony opportunity was given for visitors to examine the establishment, which has been entirely reconstructed. Although small, it forms a complete unit of treatment, by baths, douches, inhalations, radiation, and electricity, and there is a sun lounge entirely fitted with Vita-glass. The spa will be open throughout the year, and as its situation gives it much sunshine and complete freedom from

cold winds, it should be a welcome refuge for visitors in the period from February to April.

A NURSING HOME FOR OFFICERS.

The Officers' Association (Scottish Branch) has established a nursing home in Edinburgh for ex-officers. In opening the institution, the Duchess of Atholl commented on the difficulty that such men had to fit themselves into other forms of work or to find alternative work of any kind. Reductions in the Services were inevitable after a great war, but people did not always remember what acute personal problems might be the result of these reductions. The home is for officers and ex-officers of the Royal Navy, the Army (including the Territorial Army), or the Royal Air Force, who must either be or become members of the Officers' Association. No charge is made for maintenance or nursing, but the officers are responsible for the payment of their physicians, surgeons, and for treatment, subject to any special arrangement between individual officers and the nursing home committee. The patients may select any physician or surgeon to attend them.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

PUBLIC HEALTH NEEDS IN THE FREE STATE.

THE Department of Local Government and Public Health is making persistent endeavours to persuade the more dilatory county councils to fulfil their statutory duty of appointing county medical officers of health. The County Dublin is one which has so far neglected its duty in this respect, and, in a recent letter to the Dublin County Council, the Department points out that there are special reasons why the health of the metropolitan county should receive attention. It contains within itself the largest borough in the country—namely, Dun Laoghaire—while its contiguity to the capital city exposes it to special dangers, and imposes on it special responsibilities. Moreover, though much of County Dublin is rural, even the rural areas have a bad record as regards health. Both in general mortality from all causes and in infant mortality the rural areas are worse than the urban areas in the same county as previously constituted. The infant mortality of the rural areas of the county exceeds by over 73 per cent. the average incidence in the rural areas generally of the whole of the Irish Free State.

The Department forwarded with its letter to the Dublin County Council a very informative memorandum dealing with the general need for public health reform in Ireland. It is stated that public health organisation has been hitherto definitely behind modern requirements, owing largely to the fact that the local health officers were primarily engaged in treating disease. In recent years more searching criticism, from external as well as internal sources, had made clear the need for reform. As a specific instance of such criticism is quoted the fact that as a result of a recent outbreak of typhus fever in the Letterkenny district, the United States public health authorities had placed an embargo on immigration from that area. It is stated, too, that the more effective control, from the point of view of health, of the production of food in England and Denmark had placed Ireland at a commercial disadvantage. Unless adequate assurance can be given that Irish meat supplies and dairy produce are above suspicion there is a danger of markets being closed to Irish exports. The Department points out that infection and disease have little respect for arbitrary administrative boundaries, and it is beyond dispute that the best results in the prevention of human suffering and death are achieved in large areas of local control.

AUSTRALASIA.

(FROM OUR OWN CORRESPONDENT.)

A HYDATID REGISTRY.

THE College of Surgeons of Australasia have decided to establish a Hydatid Registry, an idea no doubt suggested by the registry of bone sarcoma founded some years ago by the American College of Surgeons. It is intended to investigate every possible instance of human infection in Australia and New Zealand and correlate the records obtained. The registry will be kept in New Zealand by Dr. R. A. H. Fulton, of 2, Pitt-street, Dunedin, who has been appointed Registrar, and who will each year issue a summary of the cases, with the conclusions to be drawn from their analysis. Sir Louis Barnett, Dr. H. T. C. Ackland, and Prof. F. Gordon Bell will be the New Zealand committee in charge of the investigation. Special record forms have been circulated to the medical superintendents of all hospitals in Australia and New Zealand, and are available for medical practitioners, on request.

Although hydatid disease is more common in Australia than in any other English-speaking community, it is, perhaps, surprising that it is not, in fact, more common than it is. Clunies Ross,[1] investigating hydatid infestation in New South Wales, found that from 15 to 16 per cent. of dogs examined in country districts harboured the *Tænia echinococcus*, with an average infestation of 18 per cent. These figures are probably well below the mark. He found that the infestation of dogs in the vicinity of slaughter-houses and at sheep stations was particularly high. This has been confirmed by the Melbourne University Veterinary School, who found that 100 per cent. of the dogs around the municipal abattoirs were infested. This infestation is attributed to the habit of throwing to the dogs all the viscera of the slaughtered sheep. Prof. H. R. Dew, in his book[2] has shown that the distribution of hydatid disease in Australia follows the sheep distribution. Though in New Zealand the proportion of sheep per head of population is higher than in Australia, the proportion being 15·3 and 13·0 respectively per head of population, hydatid disease is not so common in New Zealand as in certain parts of Australia. In Australia, the disease is most common in Victoria, whilst its rarity in Queensland is remarkable. It is obvious that the main attack must be directed against the dogs, particularly those around slaughter-houses and on sheep stations. Clunies Ross, amongst other recommendations, has suggested the administration of arecolin hydrobromide to all such dogs once every three months. Fondling or handling dogs, and allowing them to lick the hands, is regarded as a dangerous practice, particularly for children.

There is no doubt that the establishment of the registry will be the means of increasing our knowledge of the disease, and perhaps of directing greater attention to methods of eradication.

[1] Med. Jour. of Austral., March 14th, 1925, p. 253.
[2] Hydatid Disease, Sydney, 1928.

LONDON MEDICAL EXHIBITION.

(*Concluded from p. 939.*)

WE conclude this week an account of the exhibition, continuing, first, the notes upon

Drugs and Pharmaceutical Preparations.

A stand of interest to many was that of INGRAM AND ROYLE, LTD. (45, Belvedere-road, S.E.), where a large variety of the natural mineral waters in use for affections of the kidneys and bladder and for gout and rheumatism was displayed. The indications for the employment of natural Vichy salts, Contrexéville, Evian, Carlsbad, and Hunyadi-János waters are well known, while the waters from other springs, such as those of Ems, Kissingen, Plombières and Vittel, have many adherents, and the prescribing of Geisshubler water is becoming popular in practice. That Abanah and Pharpar may, however, be as efficacious as the Jordan was the reason for stands at which the claims of Harrogate and Bath in different directions as balneological centres were justified. At Harrogate the diversity of waters, each possessing distinctive characteristics, was set out by a representative of the Spa Directorate, while the chief analyst was also in attendance at the stand. The bathing establishments here are under the supervision of the Harrogate Medical Society. The same coöperation between the bathing establishments and the medical profession exists at Bath, and the exhibit sent by the corporation showed the famous Roman spa to be quite modern in its scientific developments.—At the stand of SOAPLESS FOAM, LTD. (17, Dover-street, W.), a demonstration was given of the Sandor foam baths as an adjuvant to the treatment of rheumatism, nervous debility, and anæmia, much printed evidence of the efficacy of these baths in the different conditions being advanced by continental physicians over the last four years.—THE BRITISH ORGANOTHERAPY CO., LTD. (22, Golden-square, W.), showed a wide range of glandular products and in particular asked medical visitors to give a trial to Saccharomycin (B.O.C.), a fluid living yeast valuable in furunculosis and acne; to Evatmine, a compound of pituitary extract, adrenalin, and salt, of value in the treatment of spasmodic respiratory affections as vouched for by a group of medical men; and to Opojex, intramuscular injections of which are of assistance during labour.—At the stand of THE MOND STAFFORDSHIRE REFINING CO., LTD. (Abbey House, Westminster, S.W.), particulars were being given of the germicidal properties of Monsol, attention being directed to its utility in obstetric practice.—THE BRITISH CATADYN CO., LTD. (Southampton-row, W.C.), have given this name to a preparation of silver fixed in a non-colloidal form on suitable carriers, exposing a large surface. The testimonials to sterilising action come from official sources and establish a claim for a trial, as was said in our columns recently (THE LANCET, August 2nd, p. 280) in referring to the severe and critical tests which have been applied to the catadyn method of sterilising water.

At their respective stands, such well-known firms as BOVRIL, LTD. (148 to 166, Old-street, E.C.), J. C. ENO, LTD. (Fruit Salt Works, Pomeroy-street, S.E.), CADBURY BROS., LTD. (Bournville), and HOVIS LTD. (London, Macclesfield, Manchester, and Bristol), provided general information, documented where necessary by medical evidence, as to their wares.—ENERGEN FOODS CO., LTD. (Willesden, N.W.), showed diets based upon their special breads, biscuits, and health foods, as indicated in the dietetic treatment of diabetes and obesity.—VIROL LTD. (Hanger-lane, Ealing, W.), exhibited a food designed to meet the particular requirements of the age of growth, and the firm is able to call in support of their claims investigation in the laboratories at Cambridge.—BRISTOL-MYERS CO. (112, Cheapside, E.C.) showed the effervescent saline laxative Sal Hepatica, and also a tooth paste, Ipana, which contains an antiseptic of the naphthalene series which has proved effective in dental disorders and elsewhere.—THERMOGENE CO., LTD. (Haywards Heath, Sussex), showed on their stand sample boxes of this medicated wadding for employment in situations where the troublesome application of poultices and fermentations used to be the routine.—Kaylene, which is a derivative of kaolin, was shown in several forms by KAYLENE, LTD. (7, Mandeville-place, W.), the claims for the preparation being that, in a colloidal form, it presents a combination of properties essential to an active adsorbent of intestinal toxins.—GENATOSAN, LTD. (Loughborough, Leicester), displayed their various productions, such as Sanatogen, Genasprin, Formamint, detoxicated and ordinary vaccines, and calf vaccine lymph.—TRUFOOD, LTD. (The Creameries, Wrenbury, Cheshire), asked attention for their milk products, including a Humanised Trufood, closely approximating to breast milk; this is a full-cream preparation for which the claim is made that it possesses the attributes of Grade A milk.

Surgical Instruments and Appliances.

JOHN WEISS AND SONS, LTD. (287, Oxford-street, W.). This firm, which contracts for H.M. and the Indian and Egyptian Governments, and supply British, foreign, and Colonial hospitals, displayed a large selection of instruments. These comprised many recent designs, and useful additions to an extensive range of ophthalmic instruments; an operation lamp, the patent of the firm, was noticed closely on account of its separate water-filter attachment for projecting microscopic slides, whose employment in teaching is being steadily found more valuable.—ARNOLD AND SONS (Savory and Moore (1928), Ltd.), in association with JOHN BELL AND CROYDEN (50–52, Wigmore-street, W.), displayed a large selection of hospital furniture and of instruments made of stainless steel.—The collection exhibited by DOWN BROS (21–23, St. Thomas's-street, S.E.), on three stands included many instruments recently made at the suggestion of well-known surgeons. In view of the discussion to be held in a few days at the Otological Section of the Royal Society of Medicine on precancerous conditions of the larynx, Howarth's improved model of Chevalier Jackon's Bronchoscopy and Œsophagoscopy instruments came in for close notice.—THE HOLBORN SURGICAL INSTRUMENT CO., LTD. (26, Thavies Inn, Holborn Circus, W.C.), asked visitors to ascertain for themselves the advantages of the Holborn twin pump operation table, as the mechanism for placing the subject in the best position for operation is ingenious and easy to work with the foot, while the head and leg straps are conveniently adjustable. The firm also showed a large selection of electric apparatus.

RADIUM ELECTRIC, LTD. (24, Grosvenor-gardens, S.W.), exhibited the Q-Ray Electro-Radium Compress, a recent development in the field of mild radium therapy. This is a combination of dry heat and radium. The radio-active strength, as certified and guaranteed by the Berlin and Vienna Radium Institutes, is 0·013 mg. The compresses can be obtained on loan for testing purposes by medical men without obligation.—T. J. SMITH AND NEPHEW (42, Tavistock-square, W.C.). Through the regular houses for the distribution of surgical material the elastroplastic bandages of this firm can always be obtained. Elastroplast is the trade name for a resilient and adhesive dressing which is supplied either ventilated or in a form which permits bathing without removal. The bandages can also be obtained impregnated with drugs, the lesion indicating the particular kind of medicated dressing to be employed.—BRUCE GREEN AND CO., LTD. (14, 16, 18, Bloomsbury-street, W.C.), make a speciality of optical appliances and showed all types of instruments for ophthalmic work—e.g., optical trial cases, facial measuring sets, ophthalmoscopes, and retinoscopes.—R. H. DENT (309, Oxford-street, W.) displayed the "Ardente" apparatus in different types.—PHILIPS LAMPS, LTD. (145, Charing Cross-road, W.C.), on two stands, showed the Metalix-portable X ray outfit, and throughout the exhibition its simplicity and compactness were demonstrated to visitors. The necessary current can be obtained

from the ordinary light mains.—THERMEGA, LTD. (53, Victoria-street, Westminster, S.W.), showed the Thermega electric radiant blanket, which has been found useful in supplying a dry warmth in a convenient manner to patients suffering from many forms of pain or disability. The cost of the current used per hour, at 6d. a unit, is said to be only ¼d., while the blankets are designed to reach a temperature of approximately 105° F. within the hour. A patent thermostat controls the temperature and makes overheating impossible, and the blankets are made to suit any voltage from 50 to 250 with adjustment.

CAMERON SURGICAL SPECIALITIES, LTD. (57C, New Cavendish-street, W.), exhibited complete medical and dental sets for diagnosis by transillumination of the nasal sinuses, the alveolar process, and the eye. An important exhibit was the Cauterodyne, a radio-frequency cautery indicated for use in carcinomatous conditions, where this method of operation is becoming increasingly popular, following on the experience of Harvey Cushing, Wyeth, and others.—THE DOMEN BELTS CO., LTD. (26, Sloane-street, S.W.), showed the latest models of their abdominal corsets and belts applicable to various conditions, hernial, post-operative, and traumatic. The firm also asked attention for a new bandage, the Poro-lastic, as particularly useful in cases of varicose veins and the conditions remaining after phlebitis or sprains.

Publications.

BAILLIÈRE, TINDALL AND COX (7–8, Henrietta-Street, W.C.) exhibited a representative collection of their publications which included the 13th edition of Rose and Carless's "Manual of Surgery," the 10th edition of Cabot's "Physical Diagnosis" and the 3rd edition of Eyre's "Bacteriological Technique." Nicole's "Psychopathology" had a prominent place on this stand.—WILLIAM HEINEMANN (Medical Books), LTD. (99, Gt. Russell-street, W.C.), exhibited Jacobi's "Atlas of Dermochromes," with English text by Dr. H. MacCormac, Souttar's "Radium and its Surgical Applications," and other popular works of medical interest.—JOHN WRIGHT AND SONS, LTD. (Bristol), the publishers of the "Medical Annual" and the *British Journal of Surgery*, called particular attention to a French "Index of Differential Diagnosis" and to Tidy's "Synopsis of Medicine."—H. K. LEWIS AND CO., LTD. (Gower-street and Gower-place, W.C.), the founders and organisers of the well-known medical library, exhibited, together with an assortment of medical publications, the Lewis's Card System of book-keeping and case-taking, a system specially designed for the convenience of the practitioner.

The Exhibition was a success, a large number of doctors attending, to learn the value and application of material aids to practice, placed at their disposal by applied chemistry and physics.

PUBLIC HEALTH SERVICES

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are 1929 statistics of three cities:—

Name of district and estimated (R.-G.) mid-year population.	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.		
		All causes.	Tuberculosis.	Cancer.	Respiratory diseases with influenza.	Heart disease.	Infant and neonatal mortality.	Young child (1–5 yr.) mortality.	Maternal mortality from childbirth.
Glasgow .. (1,074,881)	21·2	16·5	1·26	1·37	4·2	2·2	107/37	64	8·3
Sheffield .. (518,000)	15·4	13·2	0·95	1·40	3·1	1·8	88/39	44	6·6
Leeds .. .. (478,590)	15·5	16·5	1·30	1·43	4·2	2·6	97/42	74	4·4

Stillbirths per 100 live births: Glasgow, 4·8; Sheffield, 4·8; Leeds, 5·0.

Glasgow.

Dr. A. S. M. Macgregor looks forward with great interest to the census of 1931, as the accuracy of the 1921 census was open to question. The Registrar-General's estimate of Glasgow's population is 85,839 less than the local estimate and on the larger local estimate the birth-rate becomes 19·6, the death-rate 15·3, and the other rates per 1000 of the population are lowered in proportion.

Glasgow was one of the first cities to feel the influenza epidemic. In the closing days of December, 1928, influenza was rife among the crews and passengers of ships arriving from America, and the Glasgow epidemic began in the week ending Jan. 5th, 1929. Three weeks later the maximum mortality was reached of 53·4, and in another three weeks the epidemic was over. Concomitantly there was fog and cold weather. The deaths from pneumonia (2447) were higher than in any previous year. Hospital accommodation was strained to the utmost. At one time over 600 beds were occupied by pneumonia cases, of which about 60 per cent. were admitted. The prevalent type was a severe broncho-pneumonia. The voluntary hospitals and poor-law authorities and the district nursing association coöperated in every possible way. The death-rates at the extremes of life were unusually heavy. The rates for the remaining quarters of the year were noticeably low, and the measles epidemic, which occurred in the third quarter, was the mildest ever experienced, with a comparative absence of pneumonia. It is pointed out that the behaviour of pneumonia from year to year is responsible more than any other single factor for the fluctuations in the general death-rate. Studies of the incidence of pneumonia reveal no tendency to diminution and there are no clearly defined principles of prevention. Ready admission to hospital is the only feasible course, and better arrangement of the existing hospital facilities is one of the important problems of the future. Detailed inquiry as to the incidence and spread of respiratory diseases in selected areas is in progress, and also laboratory investigation of the types of organism concerned.

The rapid decline in pulmonary tuberculosis in spite of the small and often overcrowded houses Dr. Macgregor finds it difficult to account for. Administration is being assisted by some unknown agency. There are two striking features in the decline. The first is that no impression is being made on the incidence and severity of acute phthisis affecting young adults of either sex. The second is a remarkable fall in phthisis at later years, more marked among women. These features have been clearly brought out by Dr. J. A. Wilson for an eastern area of the city with a population of 200,000 persons. Non-pulmonary tuberculosis has declined even more rapidly. Since the first decade of the century meningitis fatality has decreased to one-third, abdominal tubercle to one-fifth, and other forms to two-fifths of the former rates. The types of non-pulmonary tubercle, especially glandular and abdominal disease, are less severe, and bone and joint affections show less tendency to rapid abscess formation, whilst amyloid disease is now seldom encountered. Dr. Macgregor thinks that the abolition of crippling from tuberculosis should be attained, now that the existing provision of 350 beds is increased to 750 beds by the recent opening of the Mearnskirk Hospital for children. Dr. Macgregor suggests that the contracting sources of human infection have contributed to this decline in non-pulmonary tuberculosis,

but that the pasteurisation of 80 to 90 per cent. of the city's milk may have had a part in the great fall in abdominal tuberculosis. He points out, however, that the sale of designated milks makes very slow headway. The daily sale of milk from tuberculin-tested herds only amounts to 1070 gallons and that of Grade A and pasteurised milk to 1115 gallons. He also cites the conclusion in the 1929 research monograph of the Ministry of Agriculture and Fisheries that the pasteurisation of milk at 145° F. for 30 minutes is not an absolute guarantee that the treated milk is free from the tubercle bacillus, in view of fluctuations in temperature, defects in the plant, and desire to conserve the cream line.

New houses were fewer than last year but have averaged 5500 for the past four years, thus making provision for a population of 90,000 during that period. Two-thirds of the houses now erected are three-roomed, and there is a corresponding reduction in larger houses. The "intermediate" municipal houses, with a controlled system of letting for the purpose of relieving overcrowding, are easing the situation, but overcrowding in one-roomed houses has apparently diminished very little since the war. Since 1923 improvement schemes involving 5110 houses have been completed. Another large scheme has been begun, involving a congested area of 22 acres with a population of 5151. The general death-rate in this area has been 22·5, as compared with 17·8 for the rest of the ward with the other mortality figures in proportion. New sites for rehousing within the inner or intermediate zones of the city are becoming scarce and there is a danger of over-building to the exclusion of playing spaces for the children. All dishoused families are offered a new house and about 75 per cent. accept the offer. Subsequently, about 10 per cent. either become weary of making an effort and return to the slums after a brief trial, or are evicted. Most of the remainder do exceptionally well and a definite system of supervision of tenants has been evolved. The benefit to the children by the removal is attested by the headmasters of the schools.

There has been much improvement in the industrial pollution of the air. At the beginning of the century the nuisances reported from 100 observations of chimneys were 17. The present figure is 1·25. The soot falling on the city is 30 per cent. less than in 1914. The classes for the instruction of firemen have been invaluable. Recent observations show that the soot falling on Sundays is 78 per cent. of the amounts falling from Monday to Friday, indicating that domestic smoke is the main factor in air pollution.

Sheffield.

Dr. John Rennie, who was tuberculosis officer and deputy medical officer of health, succeeded Dr. F. E. Wynne after the death of the latter last April, and submits the report for 1929. The birth-rate was the lowest ever recorded in Sheffield and 4·4 less than the average for the previous decade.

The influenza epidemic affected Sheffield less seriously than Glasgow or Leeds. The general death-rate was 1·0 higher than the average for the previous ten years. Of the 3389 notified cases of pneumonia, 318 were removed to the fever hospital. Mild scarlet fever was very prevalent The notifications were 4688. Over 71 per cent. were removed to hospital, where the average duration of stay was 35 days. The deaths numbered 23, a case-fatality of 0·5 per cent. Diphtheria cases numbered 760, of which 94 per cent. were removed to hospital. There were 34 deaths, giving a case-fatality of 4·5 per cent. There were 13 notifications of encephalitis and 12 deaths were registered, chiefly of cases, who contracted the disease in 1924, the year of the severe outbreak. Sheffield's death-rate from tuberculosis was less than that of any of the towns in England and Wales with populations exceeding 200,000, excepting Plymouth, Portsmouth, and Croydon; and was also less than that of England and Wales both for pulmonary and all tuberculosis. This favourable position is attributed to the coöperation of the general practitioners in the scheme, to the provision of adequate institutional accommodation, and to the discovery of early cases by the examination of contacts. The work of the surgical tuberculosis officer, Dr. C. Lee Pattison, and of King Edward VII. Sanatorium has also had a noteworthy effect in securing the early treatment of non-pulmonary tuberculosis. The percentage of deaths amongst grinders from tuberculosis of the lungs has not decreased during the last 44 years. The scheme for rehousing infectious cases of tuberculosis began in 1928. Altogether 59 families have been rehoused under this scheme. Seven of the tenancies terminated after the death of the patient or for other reasons. On Dec. 31st there were 52 families in the scheme. All the members of these families are examined at the dispensary and their homes are visited by the health visitors. The improvement in the health of the families, particularly of the children, the air of well-being and optimism, the cleanliness of the homes, and the brightness of the gardens have been striking features to visitors.

The Joint Smoke Abatement Committee has been extended to include all the neighbouring local authorities except Wortley Rural District Council. An advisory committee, including manufacturers, is carrying out research with a view to lessening the smoke from metallurgical furnaces. The privy conversion scheme has now been completed, and steps are being taken to substitute ordinary w.c.'s for trough-closets and waste water-closets, and to secure the provision of a separate sanitary bin for every house.

Leeds.

Dr. J. Johnstone Jervis reports that the birth-rate was the lowest ever recorded, and that owing to the influenza epidemic in the first quarter, the death-rate was the highest since 1918, and 3·3 above the average of the previous five years. The infantile mortality-rate also shared in the rise, and there were 70 more infant deaths from pneumonia, 13 more from measles, and 15 more from whooping-cough than in the previous year.

The death-rate from influenza and respiratory diseases was 11·99 in the first quarter, as compared with 1·7 for the remaining nine months of the year. The peak week for the influenza epidemic was that ending Feb. 3rd. Scarlet fever of a mild type was also prevalent. There were 3473 cases, of which 3035 were removed to hospital. The deaths numbered 29. Notifications of measles numbered 10,742, and deaths 102. Whooping-cough was also more prevalent and caused 107 deaths.

Regret is expressed that no progress has been made with hospital provision for orthopædic conditions, including surgical tuberculosis. The present position, Dr. Jervis says, is most unsatisfactory and calls urgently for attention. Another unsuccessful attempt has been made to unify the school medical and public health services. Fatal street accidents from motor vehicles were 48 as compared with 53 in the previous year, and the chief constable reports that the installation of automatic signals at crossings has considerably increased the safety of the streets. The notifications of diphtheria were 536 with a case-fatality of 4·8 per cent. Parents have availed themselves but little of the immunisation facilities provided for their children. An unusual outbreak of seven cases of diphtheria among the nurses at the Infants Hospital occurred. The infecting case was a nurse, who resumed duty after convalescence from faucial diphtheria and was afterwards found to have an area of intertrigo behind the ear, which harboured the diphtheria bacillus.

Among the 2975 dairy cows stalled in the city veterinary inspection detected 8 with tubercle of the udder and 6 with generalised tuberculosis. Altogether, including notifications from owners, 33 animals were slaughtered under the Order. The city analyst's report gives instances of cheese becoming contaminated with tin from the foil in which it is

wrapped, and an internal wrapping of grease-proof paper is suggested.

Attention is drawn to many needs in environmental sanitation. Sanitary bins should be substituted for many thousand ash-pits. The common lodging-houses are by no means satisfactory. During the year 49 underground rooms used as dwellings were discovered and 6 cellar dwellings. For all but two alternative accommodation was found. The underground workplaces numbered 341, and include 42 used as offices. Dr. Jervis emphasises the need for legislation to secure better accommodation for office workers. It is ten years since the survey of slum areas was made, but only one small area of 49 houses has been cleared and another partially cleared. There is an alarming increase in houses let-in-lodgings for which, says Dr. Jervis, registration is a purely optional matter. The 7066 municipal houses erected since the war include 524 cottage flats, let at an inclusive rental of 8*s*. to 9*s*., for which there is a great demand. Unfortunately these are on the outskirts and do not provide for slum tenants unable to pay the cost of transport to their work. For such, Dr. Jervis suggests the continental system of large blocks, round open squares with heating, laundry, and other services in common, in the central area of the city.

MENTAL HOSPITAL REPORTS.

The DORSET MENTAL HOSPITAL had 927 patients in residence at the end of last year. The recovery-rate was 36·18 per cent. and the death-rate 7·58 per cent. The general health of the patients was good and there was no infectious disease except a spring epidemic of influenza, which brought with it 20 fatal cases of broncho-pneumonia. The dentist visited fortnightly and treated 210 patients. The laboratory carried out 2382 routine examinations, including a search for typhoid carriers and a systematic examination of the fæces of all patients; four new carriers were discovered and eight carriers of dysentery. The Meinicker micro-reaction for syphilis has been investigated and is to be used as a routine in future, keeping the more complicated Wassermann for confirmation. The hospital records were searched to see if there was any ground for the statement that gall-stones are more common in the insane than in the general population. This was found to be true for patients under 40 years of age, young epileptics being specially liable to cholelithiasis. A leucocyte study has been continued, and Buscaino's black reaction was carried out on all urines. Six general paralytics were treated with tryparsamide, with satisfactory results. The out-patient clinic at Dorchester was held weekly. On the poultry farm an interesting attempt was made to eradicate carriers of bacillary white diarrhœa by means of the agglutination blood test. When once an outbreak of this infection occurs the death-rate is 75 per cent. and about half the survivors become carriers and pass on the disease to their offspring. The farm is to be congratulated, therefore, on collecting 135 doubly tested birds, from which some 1500 healthy chicks have been hatched. As in the past, much attention was given to occupational therapy, and plans for a handicraft room have been approved. A large number of patients were allowed out on trial and on parole. Two female nurses work on the male side and 35 attendants and 19 nurses are certificated or registered.

The CITY OF CARDIFF MENTAL HOSPITAL had 705 resident patients on the first day of this year. The recovery-rate was 44·3 per cent. and more than half of the patients discharged were in residence less than six months—just under a third of them less than three months—so that under the new Act they would escape certification. The general health was good; there was no dysentery and only four cases of tuberlosis and two of erysipelas. The death-rate was 9·12 per cent. New women patients underwent a routine gynæcological examination as part of a piece of research which will be published shortly. All suitable cases had routine examinations of the ear, nose, and throat, and the dental surgeon examined 572 patients. The consulting surgeon performed three major operations. The result of this specialist work is the conclusion that removal of focal sepsis does not necessarily improve the mental state, but that all such lesions should be carefully sought for. In the biochemical laboratory an attempt has been made to study changes in carbohydrate metabolism in psychotics. Results indicate the close relationship between hyperglycæmia (after glucose ingestion) and emotional tension. The oxidative processes in the brain and the relationship between structural intactness and physiological activity in the living cell are being studied. Other subjects under consideration are enzyme action, hæmolytic *B. coli*, and the general relationship between toxæmia and the psychoses. Filter-passing organisms are being sought in schizophrenics, but have not yet been found. The value of artificial sunlight in manic-depressive and toxic-exhaustive psychoses has been studied. The X ray department has served 60 cases, and a large number of routine examinations have been made in the laboratory. General paralysis is treated by malaria and tryparsamide combined. Electrical treatment, massage, continuous baths, and physical drill are provided for suitable cases. Between 60 and 70 per cent. of the patients are kept occupied, and an occupations officer has been appointed. The out-patient clinic at the Cardiff Royal Infirmary is held weekly, and 125 new cases were seen during 1929. A canteen has been started in the hospital, and is so much appreciated that the profits have supplied three new loud-speakers, 14 new gramophones, and 15 dozen records. Parole is granted to 69 men and 94 women, 32 of them into the town. All ground floor wards have open doors and as much freedom is given as possible. A clinical room has been equipped in each ward. The nurses enter for the State examination; during the year four took their final certificate.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 25TH, 1930.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 86 (last week 125); scarlet fever, 2080; diphtheria, 1511; enteric fever, 51; pneumonia, 743; puerperal fever, 55; puerperal pyrexia, 83; cerebro-spinal fever, 10; acute poliomyelitis, 21; acute polio-encephalitis, 2; encephalitis lethargica, 13; dysentery, 9; ophthalmia neonatorum, 79. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Oct. 28th–29th was as follows:—Small-pox, 172 under treatment (last week 154 and 3 under observation); scarlet fever, 1769; diphtheria, 2118; enteric fever, 19; measles, 87; whooping-cough, 112; puerperal fever, 17 (plus 5 babies); encephalitis lethargica, 121; "other diseases," 46. At St. Margaret's Hospital there were 14 babies (plus 4 mothers) with ophthalmia neonatorum.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox or enteric fever, 14 (1) from measles, 3 (0) from scarlet fever, 8 (0) from whooping-cough, 25 (6) from diphtheria, 54 (11) from diarrhœa and enteritis under two years, and 42 (8) from influenza. The figures in parentheses are those for London itself.

Hull reported 4 deaths from measles, York 3, and Liverpool 2. Two fatal cases of diphtheria occurred at West Ham and at Swansea. Diarrhœa accounted for 7 deaths at Liverpool, 5 at Birmingham, 2 at Leeds, and 2 each at Manchester, Huddersfield, and South Shields.

The number of stillbirths notified during the week was 254 (corresponding to a rate of 39 per 1000 births), including 46 in London.

CORRESPONDENCE

A CHRISTMAS APPEAL.

To the Editor of THE LANCET.

SIR,—Next month we shall be preparing to give, as is our usual custom, a Christmas gift of 30*s.* to each of our annuitants and to the most necessitous of the grantees. These gifts are looked forward to by many. Some of the regular recipients are blind, others are deaf, and many of them are old and infirm. All are facing the hardships of poverty. Each year the number on our books increases and we need no less a sum than £550 this year if no one is to be left out. I bring this request before your readers in plenty of time before Christmas, because we urgently need money. Where a large donation cannot be given I would ask them not to disregard my appeal, but to send any sum, however small, to the Treasurer, Royal Medical Benevolent Fund, 11, Chandos-street, Cavendish-square, London, W. 1.

I am, Sir, yours faithfully,

THOMAS BARLOW,
President, R.M.B.F.

Nov. 5th, 1930.

CRITICISM OF THE GENERAL PRACTITIONER SERVICE.

To the Editor of THE LANCET.

SIR,—Dr. H. G. Dain, in your report of the recent annual panel conference (THE LANCET, Nov. 1st, p. 972), is recorded as saying, during some remarks upon the increase of sick benefit and the adverse criticism of such increase by the National Conference of Friendly Societies: "it was unfortunate that such people as Dr. Graham Little and Lord Riddell should make statements without actual basis in fact. The service given to the panel patient was the best type of general practitioner medical service in the world." I am entirely at a loss to understand Dr. Dain's reference to me in such a connexion, and I must ask him to specify statements made by me "without basis in fact." In an article which I contributed to the *Edinburgh Review* in January, 1929, discussing the National Health Insurance Act, I wrote:

> "The majority of medical men in this country are engaged in the medical service of the panel. The general practitioner is in fact the panel practitioner. The qualifications, competence and status of the general practitioner have improved enormously in our own time, more especially during the 17 years which have elapsed since the Insurance Act came into being. There is no better general practitioner in the world than the British general practitioner, and no criticism could be directed against his capacity to deal properly with insured persons if that capacity were not in fact restrained and hampered by bureaucratic regulations and by difficulties inherent in the circumstances of the Act . . ."

My criticism of the Act, then and subsequently, has been chiefly directed to its administrative, not its medical defects. In two recent addresses to general practitioners (the Paddington Medical Society, on Sept. 9th, and the Guildford Division of the British Medical Association, on Oct. 9th, reported in the *Medical Press and Circular* of Sept. 17th and Oct. 22nd respectively) I deprecated the proposal of the Council of the British Medical Association to ask for an extension of the National Health Insurance Act to dependants, my objection being grounded on (1) the menace to private practice which a universal panel practice would imply, and (2) the encouragement which such a request, made at the present moment by the medical profession, would give to that political party which ardently desires to establish a State medical service. I pointed out, also, that a more inopportune time for preferring this request could hardly have been chosen, in view of the chorus of dissatisfaction with the present conditions of national health insurance, as recently voiced by bodies so representative of the insured population as the Trades Union Congress and the National Conference of Friendly Societies.

I submit, Sir, that if the profession is going, as the B.M.A. Council wishes it to do, to ask for an extension of national health insurance, which it would cost at least ten million pounds a year to provide, it is not unimportant to ascertain whether those for whom it is to be provided, and who must find the money, really desire that provision. Neither the B.M.A. Council nor the panel conference is in a position to force these proposals upon the nation if the nation is unwilling to accept them. The tone of the comments made at the panel conference on the reprehensible dislike that is shown by insured persons for some of the conditions of the service now provided reminds me of a similar attitude adopted by the celebrated Prussian historian, Prof. Delbruck. In a conversation with him at dinner in the year 1913, discussing different conceptions of colonial government, I mentioned that I knew of many German settlers who had migrated from German South-West Africa to British South Africa because they did not like the military rule exercised in the German colonies. Delbruck was very angry. "I know that," he said, "but it is for the good of the Fatherland that Germans remain in German territory and" (here he thumped the table) "they *shall* like it." The chairman of the B.M.A. Council and the chairman of the Insurance Acts Committee treated the recent conference like the mere puppet of the Association, which it has, in fact, become. As a prominent member of the conference quite correctly put it: the conference has come to regard the Insurance Acts Committee of the B.M.A. as the "executive" of the conference, and the Insurance Acts Committee, in turn, is ruled by the B.M.A. Council. Small wonder, therefore, in these circumstances that the conference says ditto to the council. The voice is the voice of Jacob, but the hands are the hands of Esau and, like Esau, the B.M.A. Council is selling the doctor's birthright, his professional independence, for a mess of pottage. But if the B.M.A. Council, when it approaches Parliament for an addition to the estimates of ten million sterling a year, is going to maintain the Prussian mood of meeting criticism displayed by the conference under its tutelage, we who deprecate the imposition of universal panel practice can sleep in our beds.

I am, Sir, yours faithfully,

E. GRAHAM LITTLE.

House of Commons, Nov. 3rd, 1930.

HÆMATOPOIETIC PROPERTIES OF DRIED MILK.

To the Editor of THE LANCET.

SIR,—In his unstinted and exclusive praise to the American investigators on this subject (THE LANCET, Nov. 1st, p. 957), Mr. A. L. Bacharach has done an injustice to the brilliant work of a British scientist. An investigation occupying a period of over two years on over 500 babies was carried out by Dr. Helen Mackay [1] on the same problem, and with far more

[1] Arch. Dis. Children, 1928, iii., 117.

practical and definite results. The complete omission of any reference to this pioneer work is unfortunate. A consideration of the results of the former investigation which was carried out not on babies but on five albino rats would seem to indicate that the medicated dried milk used was deficient in some way, as growth was not as good as on liquid milk. Further, it would also appear to be indicated that the dose of iron salt (name not mentioned) was low, inasmuch as the hæmoglobin percentage dropped consistently after the third week. In Dr. Mackay's research both growth and hæmoglobin percentage were maintained high.

I am, Sir, yours faithfully,

Grosvenor-street, W., Nov. 3rd. HAROLD TAYLOR.

CHRONIC NASAL SINUSITIS.

To the Editor of THE LANCET.

SIR,—While appreciating your full review of my recently published monograph on "Chronic Nasal Sinusitis and Its Relation to General Medicine," I propose to comment on the statement that the author "reports cases of this disease (nasal sinusitis) which have recovered after exploring the sphenoidal sinus, a circumstance by now very well known, but does not explain that many cases recover either spontaneously, or after removal of part of a middle turbinal. It is thus possible . . . that a particular patient would have recovered without any intervention. This criticism may be extended to the chapters on other regions. . . ."

Maybe one must not expect the reviewer to read every page of the book he reviews, but, at any rate, on one point my teaching is the converse of what your reviewer criticises. Indeed, not once, but over and over again the importance of recognising the tendency to spontaneous recovery is stressed, as for example, in the following paragraphs:—

"We have already emphasised the frequent tendency to spontaneous recovery from sinus infections and their secondary infections, although this applies much more to the acute than to the chronic infections. And the problem that must ever recur is when to rely on this tendency to recovery, and when to operate, for while unnecessary interference is to be discouraged, ill-judged expectancy may be fraught with very grave consequences" (p. 171).

"As regards retinal and other ocular metastases, Sir John Parsons notes the strong tendency for endogenous bacterial metastases to undergo spontaneous resolution" (p. 46).

"Fortunately there is such a proclivity to spontaneous resolution of the low-grade metastasis that the persistent activity in the primary source of infection almost appears essential; (1) To the initial penetration of the organisms slowly traversing the lymph channels . . .; (2) To the maintenance of a once formed metastasis, be it . . . retinal, &c." (p. 46).

Again, having cited cases of optic neuritis proved to have been due to sphenoidal sinus infection, and illustrated sections showing the actual organisms of sepsis in an optic nerve sheath, one continues:—

"But it must not be inferred that such conditions are always consequent on focal sepsis," &c. (p. 104).

"The co-existence of nasal disease with orbital ocular disease which might be rhinogenous does not of necessity prove any causal relationship, for it is always possible to have long standing and extensive nasal accessory sinus suppuration side by side with even the severer type of orbital infective inflammations, and yet the infection of the two regions may be due to quite independent sources of infection" (p. 100).

"In some cases the primary source of ocular infection is far removed from the head, perhaps in the gall-bladder or in the large intestine" (p. 102).

Your reviewer complains that I omitted to state that "cases of sphenoidal sinusitis recover after removal of part of the middle turbinal. It is thus possible that the local blood-letting acts beneficially."

I am glad that no such suggestion finds support in my book, but on p. 106 attention certainly was drawn to experiences related more than 30 years ago:—

"e.g. H. M. Fish, referring to retrobulbar neuritis emphasised the fact that he had had several cases in which, although there was no nasal discharge, and the nasal examination was absolutely negative save for a slight hyperæmia, he had relieved the ocular symptoms by simply draining the sinus" (p. 106).

The need for precise diagnosis led me to devise, more than 30 years ago, the methods I advocate, to prove which sinus is infected and to drain and disinfect it, instead of merely doing just something in the way of blood-letting, particularly on an inoffensive middle turbinal; for such crude procedures should be discouraged.

I am, Sir, yours faithfully,

Clifton, Bristol, Nov. 3rd. P. WATSON-WILLIAMS.

A MEDICAL SERVICE FOR THE NATION.

To the Editor of THE LANCET.

SIR,—In answer to Dr. Bodman, I maintain that it can be maintained that at birth all are equal. Not, of course, meaning that every human animal is identical at birth, but that every Englishman comes from equally good stock and stands the same chance of having had a good ancestry, whatever the financial position or social status of his immediate forbears may have been.

We cannot argue from a single individual; in the study of heredity we must consider large numbers over periods of time. Take, for instance, the Londoner. For many years Sir Arthur Keith tried to find a Londoner to the third generation; that is one born in London, his two parents and his four grandparents. I took up the search. I inquired all over London, among friends and acquaintances, from patients, both in private and hospital practice. I thought I had found some at the tip of the Isle of Dogs when called to see an old lady of 70 who was still living in the cottage in which she was born, but no! Of her grandchildren one grandparent was a peasant up from the country. After four years I found at Clapham the child of a gas-fitter and at Balham two daughters of an engineer who came in Sir Arthur's category. All the rest gave the same history, someone of yeoman or peasant stock up from the country in the last or previous generation. Take again the county families. Family trees consider the male, and only just mention the woman. Yet for our purpose she is as important, and in every alternate generation different blood is brought into the old stock thereby. Among the titled nobility the change of blood is a constant theme of Disraeli in his novels:

"In a commercial country like England, every half century develops some new and vast source of public wealth, which brings into national notice a new and powerful class. A couple of centuries ago, a Turkey Merchant was the great creator of wealth; the West Indian Planter followed him. In the middle of the last century appeared the Nabob. These characters in their zenith in turn merged in the land and became English aristocrats; . . . The expenditure of the revolutionary war produced the Loanmonger . . . and the application of Science to industry developed the Manufacturer, who in turn aspires to be 'large acred.'" ("Sybil," Bk. II., Chap. 7.)

No one can say that this process has diminished in the 85 years since "Sybil" was written. Just as we of the professional classes are constantly moving into "the nobility and gentry" so we are constantly interchanging with the "worker." If we go into it we find that a grandmother was a dairymaid and that the coal-merchant great-grandfather began as a waterman when the Thames was still a highway.

A couple of years ago I dipped into the biography of a peer who though the first of the title had four surnames. He boasted of his descent from Charlemagne and thought that one who had this blood in his veins was better fitted to rule the nation than those who had not. So I took out a pencil and on totting it up thought that in all probability I, too, had the blood of Charlemagne in my veins. By allowing four generations to the century I found I had 8,747,774,640,448 ancestors when he was crowned. Allowing for the same ancestor cropping up twice quite a number of times it would still leave them as numerous as the population of Western Europe on that day. But in heredity what are 41 generations? We have to go back, not to the time of Charlemagne, but to that of the Long-Barrow and the Beaker folk and to consider all the migrations of peoples into our islands since those times. The factors of heredity may "influence very largely the potentialities for disease"; but they do so equally throughout the nation.

When I made the statement that at birth all are equal, I was referring to the physical characteristics, but I will accept Dr. Frank Bodman's challenge and include the mental ones. Of moral ones he will probably agree with me that we have no data upon which to study hereditary factors uninfluenced by the disadvantages either of great wealth or of extreme poverty and the other environmental factors that must influence all before character is developed. There is no reason to suppose that more are born "with fewer neurones than the normal baby" from any one group of the community than from any other; whether you subdivide this community into the upper and the middle and the lower classes, or whether you divide them into the rich, the comfortable, and the poor. Nor are there any statistics to show that there is more mental disease among one of the groups beyond such as can be accounted for by greater stresses causing the mentally unstable to topple over into disease. We see the same with the physical characteristics, whether one is delivering the child of a Yorkshire peasant or the babe of a tuberculous mother in a Bermondsey backyard, they are the same children; and they are the same as those that are born to middle-class parents or in the ancestral home. We hardly realise how soon the effect of environment acts upon this babe. A few days' loss of weight may not matter, but a few weeks of different care does, and by the end of two years the damage is done. Any one can recognise in adult life the poor teeth of which the crowns were laid down in these two years. Biochemistry has not yet advanced enough to recognise similar differences in the other tissues laid down in the same period. Yet we have every reason to believe they exist in these as well as in the rickety bone that becomes again absorbed.

There is no question of "sentimental consideration"; a proper answer to this question of physical equality at birth is a basis of all our work—hospital work, social-service work, antenatal clinics, care committees, school clinics, all the advances in sanitation and hygiene of the last century, housing, town planning. To a large extent they all depend upon it. If the answer is in the negative much money is thrown away; but the answer is not in the negative. From the experience of 25 years in medicine I do not believe that there is "taking place a relative increase of physically and mentally inferior people." I see no sign of deterioration among the well-to-do, and among the poor I see a very great improvement upon their condition from that I remember when I first became a medical student. There is still a great difference between the two: I repeat that it is the function of the State to eliminate the factors that make this difference. I base our justification for this on the fact that at birth we all are equal, in the sense which I have defined above and which was inherent in the context when I made the statement previously.

I am, Sir, yours faithfully,

Queen Anne-street, W., Nov. 3rd. T. B. LAYTON.

A RUSSIAN CANCER INQUIRY.

To the Editor of THE LANCET.

SIR,—In the interest of science I beg you to insert an appeal to my medical colleagues in your country whose addresses it is impossible for me to determine.

I am, Sir, yours faithfully,

Prof. Dr. N. I. KOUCHTALOFF,
Director of the Obstetric and Gynæcological Clinic at the Medical Institute of Astrakhan, U.R.S.S.

The appeal is as follows:—Having been invited by the organisation committee of the Ninth Pan-Russian Congress of Gynæcologists and Obstetricians, which will take place in Moscow in September next, to deal with the medical treatment of inoperable cancer of the uterus, I should be glad, in order to clear up the question as far as possible, to learn your experience on the subject. The campaign against cancer takes on more and more a world-wide aspect. All the medical sciences are called to coöperate in the study of tumours to which humanity still pays so vast a tribute in spite of the application of chemistry, physics, cytology, and clinical surgery. I beg you, therefore, to fill in this inquiry form.

QUESTIONAIRE.

1. Name of establishment, hospital, or institute.
2. Methods of treatment of inoperable cancers (surgical, chemical, physical, biological, &c.).
3. Their effects and results.
4. Medical treatment.

Date.	Serial No.	Age.	Microscopic diagnosis.

Substance employed.	Method of application.	Results.	
		Immediate.	Ultimate.

5. Your opinion.

The replies will be published over the names of their authors.

LAXATIVES AND COLITIS.

To the Editor of THE LANCET.

SIR,—It would appear from Dr. Spriggs's letter that I have too closely identified him with the prevalent view that paraffin is the drug par excellence in conditions of intestinal stasis, and I must offer him an apology. The experiments (2426 and 2731) quoted by Dr. Spriggs support the view that liquid paraffin, in small and medium doses, does not cause wasting. Experimental evidence of this nature is more cogent than microscopical demonstration that the paraffin in fæces is distributed as an emulsion and

not as a film, with the inference that the digestion of foodstuffs is not interfered with in this way. Parenthetically, one might point out that the quantities of paraffin administered in these experiments—1 oz. daily in No. 2426, and ½ oz. daily (in the form of jelly) in No. 2731—have often to be exceeded in practice; it would be interesting to learn the results obtained in similar experiments on the absorption of foodstuffs when larger quantities of paraffin are used which, as the references quoted by Dr. Spriggs indicate, lead to film formation.

After repeated trials and failures one wonders how often diet and exercise, without drug help, really do correct constipation. I feel certain that the general experience of practitioners in this regard cannot be a rosy one. The observance of a daily effort at defæcation at a fixed time can be religiously carried out, but the "skeletal muscles and nervous reflexes employed in defæcation" (I quote Dr. Spriggs) refuse to respond. The general view of the laxative action of paraffin appears to be that it acts purely as a lubricant. Experience makes one question this. It is probable that every laxative bears a general resemblance to every other laxative in that it acts by stimulation of the structures of the bowel wall and, on the other hand, varies from all other laxatives in possessing a peculiar mode of stimulation, and I believe that paraffin acts similarly. If paraffin were to act through lubrication the film theory would need to be assumed, and this has been disproved by the experiments quoted by Dr. Spriggs. If, on the other hand, it becomes emulsified in the fæces and causes them to hold more water than normally it would appear to act by reflex stimulation of the bowel wall by a bulky residue, and it is probable that it stimulates the bowel wall in other ways.

There is, then, no a priori reason why paraffin should replace other laxatives, as all laxatives act through stimulation. I have met with one or two patients who have complained of abdominal soreness after the use of paraffin, and I have found tenderness along the course of the colon, which I have concluded was due to irritation by paraffin.

I am, Sir, yours faithfully,

South Tottenham, N., Nov. 1st. L. J. GREEN.

TOXICITY OF VITAMIN D.

To the Editor of THE LANCET.

SIR,—We have read with great interest Dr. Duguid's article last week (p. 983) on this subject, which is all that a survey should be. There is now no doubt that very large doses of irradiated ergosterol may have definitely toxic effects on experimental animals receiving certain kinds of artificial diet. Windaus, indeed, uses the minimum lethal dose for mice, as well as the antirachitic dose for rats, to control various experimental irradiation products. It is of interest to note that the former is from 5000 to 10,000 the latter, in spite of the size of the mouse, which is smaller and presumably correspondingly more sensitive than the rat. This enormous gap between therapeutic and toxic dose—far greater, for example, than with the alkaloids—gives clinicians an ample margin of safety, as Dr. Duguid points out. It does not, however, remove the necessity for physiological standardisation of the vitamin D in all medicinal products containing it.

Manufacturers in this country to-day without exception realise this necessity. We ourselves, although first concerned with the preparation and distribution of a vitamin D concentrate as long ago as 1924, realised the necessity from the beginning, and in our own laboratories more than 5000 physiological assays of vitamin D have been carried out during the past six years. Until recently, however, we were compelled, as were the American firms to whom Dr. Duguid refers, to speak in terms of cod-liver oil. This was by no means satisfactory, for, as one of us has previously shown in your correspondence columns,[1] the variation in vitamin D content of cod-liver oils is very great.

Following the recent report of the Committee on Accessory Food Factors it will certainly not be long before all preparations produced by reputable firms will be described in terms of this unit. A short time must, however, elapse for the checking up of existing units and standards against the official preparations. When this measure of coördination has been achieved, the "authoritative pronouncement on the proper dosage for therapeutic purposes," for which Dr. Duguid so rightly asks, will, we hope, occupy the attention of the Medical Research Council.

We are, Sir, yours faithfully,

H. JEPHCOTT,
Director,
A. L. BACHARACH,
Chief Chemist.

Glaxo Research Laboratory, N.W. 1.

CIRRHOSIS FROM MANGANESE.

To the Editor of THE LANCET.

SIR,—Dr. G. M. Findlay draws our attention to the fact that he described the experimental production of liver cirrhosis by manganese salts in the *Brit. Jour. Exp. Path.* (1924, v., 92) some years before the Hursts, to whom we ignorantly (p. 959 in your last issue) attributed the discovery. We apologise.

We are, Sir, yours faithfully,

A. E. BOYCOTT,
G. R. CAMERON.

University College Hospital Medical School, Gower-street, W.C., Nov. 3rd, 1930.

THE MEDICAL REGISTER.

To the Editor of THE LANCET.

SIR,—I desire to remind registered medical practitioners that if they desire to have a new address entered in the forthcoming Medical Register they should communicate with me without delay. I should also like to take the opportunity of pointing out that the Medical Register is the statutory publication. It is the appearance of a name in this book alone which makes a practitioner legally qualified, and it should not be confused with other books of a similar nature which are purely private publications.

I am, Sir, yours faithfully,

NORMAN C. KING,
Registrar, General Medical Council.

44, Hallam-street, Portland-place, W., Nov. 4th, 1930.

[1] Jephcott, H., THE LANCET, 1928, i., 261.

STANDARDS FOR JAM.—As from the beginning of November the jam manufacturers are setting up a standard for their products, which will be classified as either of first or second quality, and will be conspicuously labelled either "full fruit standard" or "lower fruit standard." The initiative has been taken by the manufacturers themselves. In the case of mixed jams the fruit named first on the label will be present in greater proportion, thus "plum and apple" will contain more plum than apple.

PANEL AND CONTRACT PRACTICE

Efficient Rural Service.

THE opinion has been recently and repeatedly expressed that the results of National Health Insurance practice are more satisfactory in the country than in the towns.

"If this is the case," writes Rural Panel, "it might be worth while, at a time when a large extension of insurance work seems to be contemplated, to look more closely into the matter. There are certain special features common to all medical practice in rural districts as opposed to that in towns. First, the population is always a socially and financially 'mixed' one. They are not all rich or all poor. Secondly, the population is more stable; houses are not constantly changing tenants and a far higher proportion of people live and die in one place. Thirdly, country people are notoriously of a more conservative nature than townsfolk; their ideas change less quickly. Fourthly, large hospitals and consultants are much more difficult of access. Fifthly, there is the obvious fact that the distance between patient and doctor is greater.

"How do these considerations affect panel practice? In the first place a socially mixed population ensures that all rural practitioners must be 'on the panel.' Thus, there can be no 'inferior' class of doctor who only attends the poor, and the labourer knows that his own doctor may be going on to see the Lord of the Manor next on his list. This naturally increases his respect and also reacts on the doctor, who is kept up to scratch by having educated patients to deal with as well as the slower witted labouring classes.

"A stable population has obvious advantages from the medical point of view. It means that the phrase 'family doctor' really has some significance and is not a mere synonym for 'medical shop-walker.' There is a much greater chance of patients becoming friends of the doctor as well as patients, and it cannot be a disadvantage for a patient to be able to say 'I've known Dr. So-and-so for 30 years and I have every confidence in him because he knows my constitution.' Again it is only in human nature that a doctor who knows that if he sets old John's leg badly he will see him limping past his window every day for the rest of his life will take more trouble to obtain a good result than if he is merely one of a crowd or a number on a card.

"The conservative nature of the rural mind shows itself in many ways, most of which tend to improve the relations of doctor and patient. The word 'Sir,' and what is now called an old-world politeness, may mean nothing, may even be a sign of a regrettable lack of education in class-consciousness in a backward proletariat, but they certainly grease the wheels of intercourse and increase the amenities of life. A horror of chopping and changing makes the countryman very loath to change his doctor—always a regrettable occurrence—nor does he lightly follow after false gods in the shape of the latest 'discovery' of the popular press, nor pester his doctor to procure him their images to worship. Care, kindliness, and skill impress him more than an array of 'gadgets.'

"The comparative inaccessibility of consultants and large hospitals may be detrimental to the patient, but it is, undoubtedly, good for the country panel doctor. It makes him self-reliant and resourceful; forces him into a working knowledge of every branch of his subject and gives him a pride in his cottage hospital and the work it can do. A man who had not been a success in a country village was asked by a colleague why he was going to London. His reply was that in town if you didn't know what was wrong with a patient he could always be sent into hospital.

"Lastly, the greater distance which the doctor has to travel to see his patient is realised by the great majority of the patients and results, on the whole, in a diminution of unnecessary calls. There is, of course, a higher ratio of visits to cases seen in the surgery than in the towns, but while this may increase the doctor's working hours it means that surgeries are less crowded and there is less tendency to do bad work. It is also, perhaps, not too much to suggest that the quiet interval occupied in driving from one case to another may give the doctor leisure to consider each case a little more thoroughly. Again, the mileage allowance, inadequate though it still is, is to some extent a compensation, whereas the minimum fee paid by a poor private patient is often all the practitioner can expect for a ten-mile drive.

"There is, of course, the reverse of the medal. The telephone allows large householders to summon medical aid for their domestics at any hour and for any cause, reasonable or unreasonable, nor dare the doctor charge for such a visit even when requested to do so by the householder. Should maid and mistress subsequently fall out, he may find himself 'court martialled' under a grave charge. A stable population means that one person with an unjust grievance may turn a whole village against the doctor. The conservative mental outlook means that a greater amount of time must be spent in explaining the why and how of treatment: a country doctor who doesn't give 'a bottle of medicine' would lose his practice in very quick time. Finally, the routine—and often unnecessary—visits laid down by the authorities for certificate-giving purposes press very hardly when each involves a 20-minute journey by car.

"Still, taken as a whole, the above considerations seem to show that the special features inherent in country medical practice tend to improve the panel service as compared to the conditions in urban areas. It must not be forgotten that the points of view of the doctor and of the patient are not opposing ones, but are essentially similar. The aim of any scheme of medical service must be to secure efficient medical attention for its members, and thus it must not, on the one hand, make the lives of the many devoted and efficient doctors unbearable by placing them under intolerable conditions, either of too great dependence on their patients' whims, of inadequate financial rewards, or of the impossibility to do good work, nor, on the other hand, must it fail to safeguard its patients from the small minority of doctors who may be careless or inefficient.

"At present," it seems to Rural Panel, "this aim has been achieved by National Health Insurance practice in the country districts at least."

Uninformed Criticism of Insurance Practice.

In our report last week (p. 972) of the panel conference under the heading of "A Direct Attack" we recorded briefly a refutation of the misleading and exaggerated statements about insurance practitioners made at the autumn conferences of friendly societies and trade unions. We are glad to reproduce

the full text of the remarks of the chairman of the Insurance Acts Committee as given in the *British Medical Journal*. During this autumn session of conferences relating to national health insurance there appeared to have been, said Dr. Dain, a larger amount of virulent abuse poured out upon the insurance practitioner than had fallen to his lot for a good many years. It was perfectly easy for the president of the National Conference of Friendly Societies to get up and make statements when he knew there was no doctor present to challenge them, and thus these statements got a start. It appeared that the matter which had hurt the friendly societies most was the increase in sickness claims, and as they must have a scapegoat, they had fixed upon the doctor, and had drawn the most absurd conclusions from the figures presented to them. He wanted to put it to the conference that these were false deductions. Last year there were 410,000 cases referred on the ground of incapacity; the number actually examined was 211,000, and apparently the assumption was made that the rest—nearly 200,000—were people who had been improperly certified. That, of course, was an absurd assumption. It had always to be remembered that in the interval between the insurance practitioner's examination and the examination by the regional medical officer the patient in a very large number of cases was becoming increasingly fit for work. Of the 211,000 examined, only 67,000—or 16 per cent. of the total number referred—were found to be not incapable of work. The doctor's diagnosis was only reversed in 16 per cent. of cases, although the factor of time was always operating, so that these people were getting nearer and nearer to the time when they would be well. He believed that if an actuary examined the figures he would find that the number of people returned to work on account of the action of the regional medical officer who would not have been returned to work but for him was a very small number indeed.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS.

Private Members' Bills.

AMONG the notices of presentation of private members' Bills, given in the House of Commons on Oct. 31st, were the following:—Dr. ETHEL BENTHAM—Bill to amend the law relating to the nationality of women; Mr. LLEWELLYN-JONES—Bill to grant complete or partial relief from rates in the case of certain hereditaments used for the purpose of hospitals, infirmaries, dispensaries, convalescent homes, nursing homes, sanatoria, and other similar uses, or in connexion therewith; Dr. VERNON DAVIES—Bill to amend the law with respect to regulation of advertisements.

HOUSE OF COMMONS.

THURSDAY, OCT. 30TH.

Health in the Baking Industry.

Mr. THORNE asked the Home Secretary whether he had received a letter from the Essex County Association of Master Bakers, asking for legislation to safeguard the health of those engaged in the industry and to restrain those who practised methods of trading uncalled for by the public and detrimental to the welfare of the community; and what action he intended taking in the matter.—Mr. CLYNES replied: The letter to which my hon. friend refers suggested a stricter enforcement of the existing law with regard to Sunday baking and delivery of bread, or preferably fresh and more effective legislation. The matter is regulated at present by the Bread Acts of 1822 and 1836, but the enforcement of these Acts is not a matter for which my department is responsible, and I have no power to intervene. It is open to any person aggrieved, or any member of the public to take action. As regards fresh legislation, I should, of course, be willing to consider any proposals that might be submitted, though I can see little prospect at present of the Government being able to find time for any Bill on this subject.

Workmen's Compensation.

Mr. BOYCE asked the Home Secretary whether the Government had under consideration the question of introducing legislation dealing with workmen's compensation; if so, whether any steps had been taken to consult with employers' as well as workers' organisations in order to ascertain the probable effect on industry of any measures which might be in contemplation; and, if the views of these organisations had not been obtained, would the Government give them an opportunity of considering any proposed legislation on this subject before its introduction into Parliament.—Mr. CLYNES replied: The question of legislation is under consideration, but I am not in a position at present to make any announcement. The hon. Member may be assured that before legislation is introduced the employers' as well as the workers' representatives will be consulted.

Slum Clearance and Re-Housing Schemes.

Mr. GRAHAM WHITE asked the Minister of Health the number and scope of slum-clearance and re-housing schemes so far approved under the Housing Act, 1930.—Mr. GREENWOOD replied: I have received resolutions declaring 11 areas to be clearance areas, one clearance order, and one compulsory purchase order. The number of persons occupying the 11 areas is approximately 5400.

Housing Progress.

Mr. SIMON asked the Minister of Health the number of houses completed under the Housing Act, 1924, in each year ending Sept. 30th, in England and Wales, from the passing of the Act to the present time; and what further houses, if any, were built during each year to be let at rents within the capacity to pay of the working classes.—Mr. GREENWOOD replied: The following statement gives the particulars asked for in the first part of the question and shows the number of houses completed during the year in England and Wales with State assistance under the Housing (Financial Provisions) Act, 1924:—

Year ended Sept. 30th—	Houses.	Year ended Sept. 30th—	Houses.
1925	12,385	1928	53,792
1926	46,489	1929	53,516
1927	97,316	1930	51,310

I regret that I am not in a position to supply particulars sought in the latter part of the question.

Treatment of Maternity Cases.

Sir BASIL PETO asked the Minister of Health what steps he intended to take to carry into effect the interim report of the departmental committee for the improvement of accommodation and treatment of women in childbirth, particularly in cases of tuberculous patients; and whether arrangements could be made for all such cases, from whatever authority, to be sent to such sanatoria as had facilities for the reception of pregnant women.—Mr.

GREENWOOD replied: I propose, in the first instance, to communicate with the local authorities in regard to certain of the recommendations in this report, including the provision of additional accommodation for women in childbirth. As regards the second part of the question, I understand that special arrangements for confinement are not usually made in tuberculosis sanatoria, and I am advised that it is generally preferable to arrange for the transfer of pregnant women in sanatoria to a maternity home for the confinement and to readmit them subsequently to a sanatorium.

National Health Insurance.

Mr. FREEMAN asked the Minister of Health whether he contemplated making any change in the administration of the national health insurance scheme so as to include adequate dental treatment for all contributors.—Mr. GREENWOOD replied: No such change as is referred to by my hon. friend is in contemplation at the present time. I may point out that already approved societies with an aggregate membership exceeding 80 per cent. of the total insured population are providing dental treatment for their members as an additional benefit.

Ex-Service Men and the Seven Years' Limit.

Major OWEN asked the Minister of Pensions the number of applications for pensions and treatment received from ex-Service men who were disqualified under the seven years' limit; how many of these had been considered; and how many claims had been granted. Major COHEN asked the Minister of Pensions the total number of claims submitted outside the seven years' time limit that had been recognised by the Ministry up to Sept. 30th, 1930, under the following headings: recognised by the provision of treatment and recognised by a grant under special sanction, respectively.—Mr. F. O. ROBERTS replied: The total number of fresh applications made since my announcement in November last were, up to the end of September, about 18,000, a majority of which were, however, received in the first few months of this period. Some 14,500 had been considered and dealt with by that date for most of which, I fear, little or no evidence was furnished or could be obtained in their support. About 800 of these applications were ascertained by the Ministry to be well founded, and of these, 20 were found to need no more than a brief course of surgical treatment, while the remainder received compensation by way of pension or other pecuniary grant.

Poison-gas Experiments.

Lieut.-Colonel MOORE asked the Secretary for War whether his attention had been drawn to the reports in the press in regard to the work carried on at the research station on Salisbury Plain; if any, and, if so, how many, old horses were handed over for experiment in poison gas and in plague bacteria cultivation; and what action he proposed to take to stop such activities on the part of the Government.—Mr. T. SHAW replied: My attention has been drawn to certain statements reported in the press to the effect that 2000 old horses have been handed over to the experimental station at Porton for experiments in poison gas and the cultivation of bacteria for spreading plague. The facts are that during the period from 1921 to 1930 only 25 horses in all have been used for experiments at Porton in connexion with poison gas but no horse, or indeed other animal, has been used at Porton for experiments in plague bacteria cultivation. I am advised that the experiments carried out were to enable data to be obtained for preventive and curative treatment in the case of horses affected by poison gases.

Sir ROBERT GOWER asked the Secretary for War what steps were taken to prevent suffering on the part of horses and other animals subjected to poison-gas experiments at Government and other experimental stations in Great Britain; and whether he was satisfied that no such suffering took place.—Mr. T. SHAW replied: The officers holding vivisection licences for carrying out poison-gas experiments at the War Department Establishment work in strict conformity with the provisions of the Cruelty to Animals Act, 1876. The terms of these licences ensure that no unnecessary suffering is caused to the animals.

Experiments on Living Animals.

Mr. FREEMAN asked the Home Secretary how many experiments were conducted last year on living animals when inspectors were present and how many in their absence; and who decided whether an animal was suffering pain when no inspector was present.—Mr. CLYNES replied: As to the first part of the question I would refer my hon. friend to the answer given on July 3rd last. With regard to the last part, each holder of a licence is made responsible for seeing first that any animal which is suffering pain that is either severe or likely to endure is at once killed if the main object of the experiment has been attained: and, secondly, that any animal that is suffering pain both severe and likely to endure is at once killed in any case. The requirement is made a condition of the licence and any infringement of it brought to my notice would be severely dealt with. The Home Office Inspector informs me that he is satisfied that the condition is scrupulously observed by the holders of licences.

A Health Insurance Claim.

Mr. MUFF asked the Minister of Health if he would inquire into the reasons why national health benefit was withheld by the Royal Liver Approved Society to Stephen Rose, of 104, Balfour-street, Hull, after he had been certified by his doctor for benefit.—Mr. GREENWOOD replied: I have inquired into this case, and am informed that, on receipt of the benefit claim, the Approved Society found it necessary to ascertain whether the member's illness was due to an accident for which he had previously received compensation under the Workmen's Compensation Act. The Society have now satisfied themselves that this is not the case, and I understand that the benefit due was paid on Oct. 28th.

Local Supervision of Midwives.

Mr. MUGGERIDGE asked the Minister of Health what was regarded as the minimum number of midwives required to be in service in a district before the council of the district might be constituted the local supervising authority under Section 62 of the Local Government Act; and, in view of the dissatisfaction in the urban district of Dagenham, where 23 midwives were employed, of whom 19 resided in the district, he would reconsider his refusal to make an order directing that the urban district council shall become the local supervising authority.—Mr. GREENWOOD replied: The number of midwives practising in a district is not the only consideration to be taken into account in deciding whether the council of the district should be constituted the local supervising authority under the Midwives Acts. In the case of the urban district of Dagenham, I came to the conclusion that it would be premature to give these powers and duties to the district council having regard to the recent constitution of the council and its brief experience in administering maternity and child-welfare services, and I should not feel justified in reconsidering that decision.

TUESDAY, NOV. 4TH.

Experiments on Dogs.

Sir ROBERT GOWER asked the Home Secretary whether it was his intention to introduce a Bill to make illegal painful experiments upon dogs during the present Session of Parliament.—Mr. Clynes replied: The answer is in the negative.

Death-rates in Scotland.

Mr. MARCUS asked the Secretary of State for Scotland the separate death-rates amongst men, women, and children in Scotland in the years 1927,

1928, and 1929.—Mr. JOHNSTON replied: The following statement gives the death-rate per 1000 in Scotland in the case of males and females of all ages and children under 15 years respectively:—

	1927		1928		1929	
	M.	F.	M.	F.	M.	F.
All ages	14·07	12·89	13·87	12·85	15·09	13·99
Under 15 years ..	11·9	9·6	11·8	9·7	12·0	9·4

Physique of Military Recruits.

Mr. T. SHAW, Secretary for War, in reply to Major GLYN, said that from July 1st to Sept. 30th, 1930, 10,447 men were served with notice papers for enlistment in the Foot Guards and Infantry. Of this number 6,506, or 62 per cent., were rejected on medical or physical grounds.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt. W. Greaves, R.N.V.R., to be Surg. Lt.

The following appointments are notified:—Surg. Lts. G. Phillips to *Vivid*, for H.M. Dockyard, Devonport; and H. Lee-Duncan to *Mantis*.

ROYAL NAVAL VOLUNTEER RESERVE.

Proby. Surg. Sub-Lt. A. J. Beard to be Surg. Sub-Lt.

ROYAL ARMY MEDICAL CORPS.

Lts. to be Capts.: A. McMillian and W. G. S. Foster.

Lt. P. W. A. Agnew resigns his commn.

ARMY RESERVE OF OFFICERS.

Lt.-Col. J. D. Bowie to be Lt.-Col.

TERRITORIAL ARMY.

Lt.-Col. R. Errington to be Bt. Col.

Maj. G. J. Linklater to be Lt.-Col. and to comd. 155th (Lowland) Fd. Amb.

Capt. T. E. Hastings (late 5th Bn. Inniskilling Fus.) to be Lt., and relinquishes the rank of Capt.

ROYAL AIR FORCE.

Flying Officer P. J. McNally is granted a permanent commission in this rank.

Dental Branch.—S. C. Allen is granted a non-permanent commission as a Flying Officer.

INDIAN MEDICAL SERVICE.

Lt.-Col. L. P. Brassey to be Col.

Lt.-Col. (Bt. Col.) R. A. Needham retires.

Lts. S. S. Bhatnagar, B. Chaudhuri, H. L. Batra, A. V. O'Brien, S. T. Davies, S. M. K. Mallick, C. Mani, and E. S. S. Lucas to be Capts.

Lt. K. H. A. Gross to be Capt. (prov.).

Lt. (on prob.) Rewati Raman Bakhshi to be Capt. (prov.) (on prob.).

Lts. (T.C.) to be Capts. (T.C.).—A. S. Arora, Y. N. Lal, A. Ahmad, and K. B. Gore.

Lt. T. Das relinquishes his temp. commn.

The undermentioned appts. are made:—To be Capt. (prov.) (on. prob.): Gopal Das Malhoutra, Bantwal Panduranga Baliga, and Amar Nath Chopra.

To be Lts. (on prob.): Rewati Raman Bakhshi from I.M.S. (T.C.), Percy Vivian Bamford, Harold Duncan Ross Zscherpel, Anil Kumar Gupta, and Abani Kumar Chaudhuri.

The undermentioned officers retire: Lt.-Cols. H. G. S. Webb and J. G. G. Swan.

FLORENCE NIGHTINGALE'S CARRIAGE.—The town council of Chesterfield has presented Miss Nightingale's "Crimean carriage" to St. Thomas's Hospital. In view of her long association with the hospital this was thought to be its most appropriate home.

AN OPERATING BLOCK AT BOLTON.—Canon Elsee recently formally opened a new operating block at Bolton Infirmary, which has cost about £9000. Dr. F. R. Mallett, the president of the infirmary, described the block as the finest in the British Isles. The cost was undertaken by the 160 churches in the district, but so far only about £3000 has been obtained.

MEDICAL NEWS

University of Cambridge.

On Nov. 1st the following degrees were conferred:—

M.B. & B.Chir.—J. H. Gibbens, G. J. Gross, and W. R. F. Wood.

M.B.—H. J. Heathcote.

Royal College of Physicians of London.

At a quarterly comitia of the College, held on Oct. 30th, with Sir John Rose Bradford, the President, in the chair, the following candidates were admitted to the Membership of the College:—

Joges Chandra Banerjea, John Robert Blazé, Harold Ernest Brown, Alfred Bramwell Cook, Charles Clifford Davis, Percival Cholmondeley Chalmers de Silva, Doris Louise Durie, Horace Evans, Raymond Eustace Ford, Traugott Ernest Gumpert, Francis Findlay Hellier, Harold Percival Himsworth, Mohamed Ahmed Ibrahim, Louis Philippe Eugène Laurent, John Neil Leitch, Robert Alexander McCance, Owen Reginald McEwen, George Osborne Mitchell, John Henry Mulvany, Thomas Saint Martin Norris, James Vincent O'Sullivan, Trevor Kingsley Owen, James William Reid, Thomas Robson, Harold Edmund Rykert, Baldev Singh, and William Wood.

Licences to practise were conferred upon 153 candidates (including 22 women) who have passed the final examination of the Conjoint Board. The following are the names and medical schools of the successful candidates:—

E. F. Adams, Manchester; G. L. Alcock, Cambridge and St. Thomas's; R. M. Alderton, London; G. H. H. Ames, L.D.S., Univ. Coll.; M. Baillie, King's Coll.; G. Balasuriya, Ceylon and Guy's; N. B. Bapat, Bombay and Birmingham; C. O. Barnes, Cambridge and St. Bart.'s; C. R. G. Barrington, Univ. Coll.; J. H. Bartlett, Cambridge and St. Mary's; A. K. Basu, M.B., Univ. Coll.; D. S. Bateman, Oxford and St. Thomas's; J. H. Beilby, Cambridge and St. Thomas's; H. H. W. Bennett, London; J. N. Bhada, L.M.S., Univ. Coll.; Ilma B. S. Bingemann, St. Mary's; A. T. Blair, Cambridge and St. Bart.'s; D. A. S. Blair, Cambridge and St. Thomas's; W. V. D. Bolt, Guy's; O. H. Bostock, Cambridge and St. George's; J. F. Brock, Oxford and London; W. D. W. Brooks, Oxford and St. Mary's; P. Brown, Leeds and London; J. Carlton, Guy's; G. T. W. Cashell, L.M.S.S.A., King's Coll.; D. N. Chatterji, M.B., London; H. T. Chilton, Birmingham; R. T. V. Clarke, Oxford and St. Bart.'s; A. F. Clift, Toronto and London; E. C. Coaker, Oxford and St. Mary's; Adelina A. Collins, King's Coll.; W. D. Coltart, St. Bart.'s; L. C. Crane, Manchester; F. J. H. Crawford, Liverpool; K. K. Dalal, M.B., London; A. F. Davy, St. Bart.'s; P. T. L. Day, Guy's; C. A. V. de Candole, Cambridge and St. George's; V. Dellal, Manchester; Achanta L. Devi, Punjab and Royal Free; S. B. Dimson and G. W. Duncan, Univ. Coll.; D. Durbach, Cape and St. Bart.'s; E. C. Dymond, L.M.S.S.A., Bristol and St. Mary's; W. S. Dyson, Cambridge and Manchester; M. Ellis, Cambridge and Leeds; D. G. Evans and Monica M. M. Fisher, Cambridge and Univ. Coll.; E. C. I. Foot, St. Bart.'s and Sheffield; H. W. F. Freeth, L.D.S., Middlesex; G. O. Gould, Cambridge and Middlesex; K. Ghosh, Royal Free; Helen G. Gifford, Birmingham; A. H. Grace, St. Bart.'s; G. J. Griffiths, Westminster; L. H. Griffiths, Middlesex; J. H. Hall, Cambridge and St. Thomas's; Marjorie K. Hall, Royal Free; E. O. Halliwell, Leeds; F. R. T. Hancock and J. O. Harrison, Cambridge and St. Bart.'s; Lettice P. Harrison and Carrie I. Hearn, Royal Free; J. E. R. Heppoletce, L.M.S.S.A., Bengal and St. Mary's; A. R. C. Higham, St. George's; W. Hogg, St. Bart.'s; U. M. Hopkins, Bristol; B. Horwitz, Cape and London; H. R. Hovsha, King's Coll.; H. W. Howell, London; A. D. H. Hugo, Guy's; B. Isaac, St. Mary's; L. Jacobson, Cape and London; E. N. Jenkinson, St. Bart.'s; W. J. Johnson, Guy's; A. Jokl, M.D., Middlesex; C. J. King-Turner, Oxford and St. George's; G. C. Knight, St. Bart.'s; F. S. Krusin, B.D.S., Guy's; D. H. Le Good, St. Thomas's; A. H. Lendon, M.B., Adelaide; E. Lethem, L.M.S.S.A., Guy's; L. C. Lodge, Leeds and London; J. Loofe, Leeds; S. H. Lubner, London; P. H. Maal, M.D., Liverpool; J. E. S. MacDonald, London; Henrietta M. Macleod, Royal Free; J. D. McVean, Cambridge and Manchester; F. G. Maitland, Cape and St. Mary's; Dorothy Makepeace, King's Coll.; G. R. Malkin, St. Bart.'s; J. T. Mani, Durham; J. B. Marshall, St. Mary's; F. Mattar, Charing Cross; A. F. Merchant, M.B., Bombay; Barbara A. Merlin, Royal Free; T. W. Mimpriss, St. Thomas's; D. C. Mintzman, Paris and King's Coll.; H. S. Morton, Dalhousie and London; C. G. Muller, Madras and St. Mary's; D. K. Mulvany, King's Coll.; B. B. Nanavatty, M.B., Royal Free; Gladys L. Neill, King's Coll.; P. W. Parkes, Birmingham; M. A. Parthasarathy, Bombay and Guy's; R. O. Payne, Guy's; J. H. Peel, Oxford and King's Coll.; H. J. Powell, L.M.S.S.A., St. Mary's; D. L. Pugh, Cardiff and Univ. Coll.; Louise Rees, Cardiff and Charing Cross; V. H. Riddell, Cambridge and St. George's; S. L. Rikhye, M.B., London; Anna L. M. E. Ringdahl, Univ. Coll.; M. A. Robertson, Cambridge and London; M. W. Robinson, Manchester; A. W. M. Rooke, Univ. Coll.; S. Ryman, M.D., Zürich; Esther Samuel, M.B., Madras; W. W. Sargant, Cambridge and St. Mary's; S. Schenkman, Cape and London; J. B. Schofield, Guy's; Margaret W. Schreiber, Royal Free; J. Secker, Durham; Ester C. Seifert, Westminster; C. K. Simpson, Guy's; M. Singh, Lahore and Birmingham; T. Singh, L.M.S.S.A., Punjab and Charing Cross; E. H. P. Smith, Birmingham; S. Smith, London; R. H. B. Snow, Cambridge and St. Thomas's; N. Solomon, Witwatersrand and St. Bart.'s; Cecilia M. Susai, Bombay and Birmingham; R. S. Taylor, L.D.S., Middlesex; J. W. P. Thompson, Cambridge and

St. Thomas's; G. M. Tickler, Cambridge and King's Coll.; G. E. M. Turner, Middlesex; A. W. Vaisey, Cambridge and St. Thomas's; C. K. Vartan, St. Bart.'s; M. G. Vatsalya, Royal Free; C. Verity, M.B., Manchester; C. Wall, London; H. Walton, Cambridge and Manchester; J. G. Warren, Cambridge and London; S. I. Weinstein, Witwatersrand and London; Mary J. Westall, Royal Free; A. M. Weston, Cambridge and Guy's; K. L. Wig, M.B., Charing Cross; A. B. Williamson, Durham; H. W. Williamson, Cambridge and St. Bart.'s; C. Wright, Univ. Coll.; F. J. Wright, Cambridge and London; and C. H. Wrigley, Cambridge and St. Thomas's.

Diplomas in Public Health were conferred jointly with the Royal College of Surgeons upon the following:—

M. Ahern, M. Ata Ullah, Balkrishna, C. L. Bhola, H. P. Chaudhuri, Annie E. Conman, A. M. Critchley, F. M. M. Eyton-Jones, V. Freeman, D. N. Ghosh, K. T. Hosain, D. R. Kajuria, R. G. Keays, B. S. Khurana, J. N. Leitch, J. C. H. Mackenzie, Mary M. Mackenzie, Y. B. Mangrulkar, A. H. Morley, P. Singh, W. H. S. Wallace, and J. S. Westwater.

The Diploma in Gynæcology and Obstetrics was conferred upon Hilda M. Lazarus, Madras and Charing Cross.

Sir Thomas Horder, Dr. Comyns Berkeley, Sir William Willcox, Dr. A. G. Gibson, Dr. M. A. Cassidy, and Dr. Carey Coombs were elected councillors. Dr. Comyns Berkeley was appointed representative of the College on the Central Midwives Board. Dr. R. A. Young was re-elected a member of the Committee of Management of the Conjoint Board, and Dr. J. A. Nixon a representative on the Court of the University of Bristol.

The President announced that Prof. C. C. Okell had been appointed by the Council to be Milroy lecturer for 1932, and that the Jenks memorial scholarship for 1930 had been awarded to Frederick Basil Kiernander, until lately of Epsom College.

Society of Apothecaries of London.

At recent examinations the following candidates were successful:—

Surgery.—C. L. Ferguson, London Hosp.; H. R. Fosbery, Middlesex Hosp.; V. R. O. Lahanmi, Manchester Univ.; S. Lokecz, St. Bart.'s Hosp.; J. M. L. Love, St. Mary's Hosp.; E. H. W. Lyle, Cambridge Univ. and King's Coll. Hosp.; E. O. Parsons, Sheffield Univ. and St. Bart.'s Hosp.; L. C. H. Sykes, Leeds Univ.; and P. Wade, Liverpool Univ.

Medicine.—R. F. T. Finn, St. Bart.'s Hosp.; B. C. Ghose, Durham Univ.; C. R. Graham, Queen's Univ., Kingston, Ontario; M. Halperine, Univ. of Paris and London Hosp.; T. C. Keble, St. Mary's Hosp.; R. D. Newton, St. Bart.'s Hosp.; C. G. Nicol, St. Mary's Hosp.; G. S. Rozario, King's Coll. Hosp.; and C. P. Seeley, St. Mary's Hosp.

Forensic Medicine.—E. J. Jones, School of Medicine, Cardiff; and R. D. Newton, St. Bart.'s Hosp.

Midwifery.—H. Glynn, Charing Cross Hosp.; C. R. Graham, Queen's Univ., Kingston, Ontario; J. Irger, Univ. Coll. Hosp.; and W. A. Naidu and H. I. Newman, London Hosp.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: M. Asaad, R. F. T. Finn, B. C. Ghose, H. Glynn, C. R. Graham, M. Halperine, T. C. Keble, J. M. L. Love, H. I. Newman, R. D. Newton, C. G. Nicol, and C. P. Seeley.

Royal College of Surgeons of Edinburgh.

At the recent dental examinations of the College, out of 18 candidates entered, the following have passed the final professional examination and have been granted the diploma L.D.S. R.C.S. Edin.: R. F. K. Webster, J. S. Couper, T. W. Gregory, D. K. Cowan, B. A. Armitage, L. J. Goggins, G. L. Whitton, and Anne M. Munro.

University of Bombay.

Dr. Abraham S. Erulkar has been elected dean of the Faculty of Medicine in the University.

Medical Society of Individual Psychology.

The next meeting will be on Nov. 13th, at 8.30 P.M., at 11, Chandos-street, W.1, when Dr. F. G. Crookshank will speak on Individual Psychology and the Bases of Medical Science.

Fellowship of Medicine and Post-Graduate Medical Association.

Arrangements for the coming week will be found in our Medical Diary. Continuing until Nov. 29th is an afternoon and evening course on Venereal Disease at the London Lock Hospital. From the 10th to the 28th the staff at the Royal Waterloo Hospital will give a course in Medicine, Surgery, and Gynæcology. From Nov. 17th to Dec. 13th a course of lectures illustrated by cases will be given at 5 P.M. at the West End Hospital for Nervous Diseases. An all-day course in Diseases of the Chest will be given at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, from Nov. 17th to 29th. Another all-day course on Diseases of the Rectum will be held at St. Mark's Hospital from Nov. 24th to 29th. Further particulars may be had from the Secretary of the Fellowship of Medicine, at 1, Wimpole-street, London, W. 1.

Prince of Wales's Hospital Dinner.

The annual dinner of the Prince of Wales's Hospital Reunion Association will be held at the Trocadero Restaurant, Piccadilly Circus, W., on Thursday, Nov. 27th, at 7.45 for 8 P.M. with Mr. W. E. Tanner in the chair. Those wishing to be present should inform Dr. Bruce Williamson, 137, Harley-street, W. 1, stating the number of guests they are bringing.

West Riding Edinburgh Graduates.

The West Riding Association of Graduates of the University of Edinburgh will hold their annual general meeting at 6.45 P.M. and dinner at 7.30 P.M., on Friday, Nov. 21st, at the Great Northern Hotel, Leeds. Sir Norman Walker is to be the guest of the evening. Any graduate requiring further information should apply to the hon. secretary, at 33, Manor Row, Bradford.

National Institute for the Deaf.

A Conference on the Higher Education of the Deaf will be held by this Institute at University College, Gower-street, London, W.C., at 2.30 P.M., on Wednesday next, Nov. 12th. Lord Charnwood will preside and the business will be to consider a report from the Committee on the Higher Education of the Deaf and decide what steps, if any, should be taken towards realising the scheme submitted.

Specialist Nurses.

The Middlesex Hospital is establishing a system of specialist nursing. In addition to the diploma upon the completion of four years' training in general nursing, nurses will be able to obtain a special certificate of having received additional training in some particular branch. The new nurses' home comprises a model ward and operating theatre in which practical instruction is given with the aid of dummy patients.

Retirement of Two Coroners.

Sir Walter Schröder, coroner for Central London, retired last week at the age of 75 after 60 years' association with coroner's work in London and district. He has held over 30,000 inquests and attended 20,000 others. On relinquishing his duties he received a presentation from the coroners' officers.—Dr. H. R. Oswald has retired from the coronership of the Western District of London, where he has served since 1919.

Contributory Schemes in Essex.

A contributory scheme for Chelmsford Hospital will come into operation on Jan. 1st next. A married man, by contributing 3*d.* per week, will be entitled, together with his wife and children up to the age of 16, to the benefits of the scheme; single men and women, with dependants, will contribute a like sum, and those without dependants 2*d.* per week.—Of the income of the Colchester General Hospital, amounting to about £25,000, the workers' committee for the borough and the contributory scheme for the country districts together provide more than £10,000.

Memorial to Sir G. S. Abram.

Lady Abram and Lieutenant R. S. Abram, R.N., recently unveiled memorial tablets at the Royal Berkshire Hospital, Reading, to the late Sir George Stewart Abram. They are placed in the new balconies for open-air treatment at the hospital which, the inscription records, were his "cherished project." Sir George was physician to the hospital from 1904 to 1928. The cost has been "defrayed by his friends and admirers."

Birmingham's Mental Patients.

Last week an extension was opened of Witton Hall, Erdington, one of the homes belonging to the city of Birmingham for the care of healthy mental cases. The extension, which has cost £12,500, provides accommodation for 98 aged men. It was stated at the opening ceremony that proper classification at other mental institutions would compel the public assistance committee to provide very considerable further accommodation.

Congress of Industrial Medicine.

The Sixth International Congress of Industrial Accidents and Diseases will be held at Geneva on August 3rd, 1931. The principal questions for discussion will be the sequelæ and final results of traumatic wounds of the spine, traumatism of blood-vessels, cutaneous affections in relation to occupation, the influence of previous health on the results of industrial accidents, illness affecting men working upon cement and artificial stones, the reaction of the organism towards the toxic substances used in industry, and fatigue. Further information may be had from the secretary of the British National Committee, Industrial Welfare Society, 51, Palace-street, Westminster, London, S.W. 1.

King's College Hospital.

The authorities of this hospital have now decided to admit a limited number of women students to the clinical course.

Southampton Contributory Scheme.

This scheme began work last year, when £9252 was collected; in less than ten months of the present year the contributions have reached £16,371. There are 764 collectors.

Extension of Worcester Infirmary.

At a town's meeting of the citizens it has been decided to raise £90,000 for extensions to Worcester General Infirmary. Although only £18,000 is in hand the first part of the scheme is to be begun at once.

Presentation.

Dr. Joseph Bradley, the oldest medical practitioner in Salford, and his wife, who recently celebrated their golden wedding, were last week presented at the Salford Town Hall with an illuminated address and a cheque by their medical friends in Salford. Dr. Bradley has rendered loyal service to Salford not only in the medical profession but in the general civil life of the city for half a century, and for more than 30 years has given devoted service to public education.

Medical Diary

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MONDAY, Nov. 10th.—5 P.M., UNITED SERVICES. Paper. Group Captain Martin Flack: Air-sickness and Sea-sickness.
TUESDAY.—5 P.M., THERAPEUTICS. An informal Discussion on The Uses of Mercurochrome. Opener: Dr. J. H. Burn. UROLOGY: Members of this section are specially invited to attend and take part in the Discussion. 8.30 P.M., PSYCHIATRY. Presidential address. Dr S. A. Kinnier Wilson: The Approach to the Study of Hysteria.
WEDNESDAY.—5.30 P.M., SURGERY: SUBSECTION OF PROCTOLOGY. Presidential address. Mr. Lionel E. C. Norbury: Multiple Primary Malignant Growths, with Special Reference to the Colon and Rectum. Illustrative specimens will be shown.
THURSDAY.—8.30 P.M., NEUROLOGY AND OPHTHALMOLOGY. Special Discussion on Vascular Tumours of the Brain and Spinal Cord. Openers: Dr. A. Lindau (Sweden), Mr. Treacher Collins (Ophthalmology), Sir Percy Sargent (Neurology). Followed by Dr. J. G. Greenfield, Mr. G. Jefferson, Dr. Dorothy Russell, and others. Members who wish to take part in the Discussion please communicate with Dr. C. P. Symonds, 74, Wimpole-street, London, W.
FRIDAY.—5.30 P.M., CLINICAL. (Cases at 4.30 P.M.) Dr. F. E. Saxby Willis: Aortic Aneurysm and ? Syphilis of the Lung. Dr. F. Parkes Weber and Dr. M. Scholtz: Anæmia with Splenomegaly. Simple Achlorhydric Anæmia (Dr. L. J. Witts). Mr. Harold Edwards: ? Specific Disease of the Humerus in a Girl aged 15 Years. Dr. D. W. Buxton: Thrombo-angiitis Obliterans. Mr. R. Rutherford: Hermaphroidism. Mr. Paul Bernard Roth: Fracture Dislocation of the Ankle Joint. Dr. Harold Avery: Multiple Osseous Defects. Mr. Cecil P. G. Wakeley: Congenital Short Humerus. Advanced Osteo-arthritis of the Hip-joint. Mr. Eric A. Crook: Cyst of the Neck. Other cases will be shown. Reports will be given on the following cases that have been shown at previous meetings: Mr. Cecil P. G. Wakeley: Vascular Tumour of the Brain. Dr. Hugh S. Stannus: A Case Illustrating Banti's Syndrome in Syphilis. Dr. Salisbury Sharpe: Tuberculosis of the Prostate. OPHTHALMOLOGY. No meeting.

ROYAL INSTITUTION, 21, Albemarle-street, W.
TUESDAY, Nov. 11th.—5.15 P.M., Mr. C. D. Ellis, F.R.S., Aspects of Radio-activity.
THURSDAY.—5.15 P.M., Prof. J. B. Haldane: Physiology of Water.

HARVEIAN SOCIETY OF LONDON.
THURSDAY, Nov. 13th.—8.30 P.M. (at the Town Hall, Paddington Green, W.). Two Cinematograph Films by Kodak Ltd.

SOCIETY OF MEDICAL OFFICERS OF HEALTH, 1, Upper Montague-street, Russell-square, W.C.
FRIDAY, Nov. 14th.—5 P.M., Prof. David Burns: Some Points of Contact between Preventive Medicine and Physiology.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, Nov. 10th.—8.30 P.M., Discussion on The Diagnosis and Treatment of Malignant Disease of the Chest. To be introduced by Prof. Chevalier Jackson.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.
FRIDAY, Nov. 14th.—8.45 P.M. (at the Miller General Hospital, Greenwich-road, S.E.), Dr. E. P. Cumberbatch and Dr. C. A. Robinson: Diathermy in Gynæcology.

PADDINGTON MEDICAL SOCIETY.
TUESDAY, Nov. 11th.—9 P.M. (at the Great Western Hotel, Praed-street, W.), Dr. C. M. Wilson: The Relationship of the Consultant to the General Practitioner.

BIOCHEMICAL SOCIETY.
FRIDAY, Nov. 14th.—5 P.M. (at St. Thomas's Hospital Medical School), Various communications.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.
THURSDAY, Nov. 13th.—5 P.M., Dr. L. S. T. Burrell: Indications for Treatment in Pulmonary Tuberculosis (Mitchell Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn-fields, W.C.
MONDAY, Nov. 10th.—5 P.M., Mr. C. P. G. Wakeley: Demonstration of Specimens Illustrating the Pathological Conditions of the Scalp and Cranium.
THURSDAY.—5 P.M., Mr. J. Herbert Fisher: Ocular Muscles, Movements and Judgments (Bradshaw Lecture).
FRIDAY.—5 P.M., Sir Arthur Keith: An Account of Col. McCarrison's Experiments in the Production of Urinary Calculi (with specimens).

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, Nov. 10th to SATURDAY, Nov. 15th.—MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W. Mon. at 4 P.M. free lecture by Mr. L. P. Winsbury White on Modern Diagnostic Methods in Surgical Diseases of the Urinary Tract (with lantern slides). Special M.R.C.P. Lecture at 8.30 P.M. Dr. T. Izod Bennett: The Relations of the Colon and Stomach in Medicine.—SAMARITAN HOSPITAL FOR WOMEN, Marylebone-road, N.W. Wed., free demonstration from 9.30 A.M. to 12.30 P.M. by Mr. McKim McCullagh (Gynæcology). — ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, Broad-street W.C. Afternoon Course in Ophthalmology.—LONDON LOCK HOSPITAL, Dean-street, W. Afternoon-evening Course in Venereal Disease.—ROYAL WATERLOO HOSPITAL, Waterloo-road, Course in Medicine, Surgery, and Gynæcology, occupying afternoons and some mornings.—Further particulars from the Fellowship of Medicine.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Nov. 10th.—2.30 to 5 P.M.: Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 to 5 P.M.: Medical, Surgical, Ear, Nose, and Throat Clinics. Operations.
WEDNESDAY.—2.30 to 5 P.M.: Medical, Skin, and Eye Clinics. Operations.
THURSDAY.—11.30 A.M.: Dental Clinics. 2.30 to 5 P.M.: Medical, Surgical, Throat, and Ear Clinics. Operations.
FRIDAY.—10.30 A.M.: Ear, Nose, and Throat Clinics. 2.30 to 5 P.M.: Medical, Surgical, and Children's Diseases Clinics. Operations.

KING'S COLLEGE, Strand, W.C.
THURSDAY, Nov. 13th.—5 P.M., Mr. W. Robson, D.Sc.: Protein Metabolism (First of four lectures.)

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL, Denmark-hill, S.E.
THURSDAY, Nov. 13th.—9 P.M., Mr. G. J. Jenkins: Otitic Vertigo.

UNIVERSITY COLLEGE, Gower-street, W.C.
MONDAY, Nov. 10th.—5 P.M., Mr. L. E. Bayliss, Ph.D.: Respiratory Functions of the Blood. (First of four lectures.)

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James's Hospital, Ouseley-road, Balham, S.W.
WEDNESDAY, Nov. 12th.—4 P.M., Mr. Alan H. Todd: Painful Feet.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE (Public Health Division).
TUESDAY, Nov. 11th.—3 P.M., Sir Leonard Hill: Atmospheric Pollution.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Nov. 11th.—5 P.M., Dr. A. Whitfield: Tuberculosis Cutis (1).
THURSDAY.—5 P.M., Tuberculosis Cutis (2).

ST. PAUL'S HOSPITAL, Endell-street, W.C.
WEDNESDAY, Nov. 12th.—4.30 P.M., Dr. G. R. Mather Cordiner: Radiography: Its Relation to Diagnosis of Diseases of the Urinary Tract.

NATIONAL HOSPITAL, Queen-square, W.C.
MONDAY, Nov. 10th.—12 noon, Dr. Greenfield: Vascular Disease in the Nervous System. 2 P.M., Dr. Riddoch: Out-patient Clinic. 3.30 P.M., Dr. Purdon Martin: Neurosyphilis.
TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Symonds: Late Subdural Hæmorrhage.
WEDNESDAY.—2 P.M., Dr. Martin: Out-patient Clinic.
THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Riddock: Myopathy.
FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Carmichael: Meningitis.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Nov. 14th.—4 P.M., Mr. Archer Ryland: Demonstrations of Museum Specimens.

ROYAL NORTHERN HOSPITAL, Holloway-road, W.
TUESDAY, Nov. 11th.—3.15 P.M., Mr. A. Lisle Punch: Demonstration of Cases.

THE HALLEY STEWART TRUST.
TUESDAY, Nov. 11th, and the following THURSDAY.—6 P.M. (in the Memorial Hall, Farringdon-street, E.C.), Sir George Newman: Modern Collective Humanism at Work, and Gains and Losses in National Health: Needs of the Future.

THE CHADWICK TRUST.
FRIDAY, Nov. 14th.—8.15 P.M. (at 9, Conduit-street, W.). Mr. J. H. Coste, D.Sc.: Objects and Methods of Sewage Treatment.

INSTITUTE OF HYGIENE, 28, Portland-place, W.
WEDNESDAY, Nov. 12th.—3.30 P.M., Dame Louise McIlroy: The Responsibility of the State to Motherhood.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.
WEDNESDAY, Nov. 12th.—4 P.M., Dr. R. Stenhouse Williams: The Importance of a Complete Study of the Nutritional Value of Milk.
THURSDAY.—4 P.M., Mrs. Marie Stopes, D.Sc.: Present Day Technique and Clinical Results in Contraception.

NATIONAL INSTITUTE FOR THE DEAF.
WEDNESDAY, Nov. 12th.—2.30 P.M. (at University College, Gower-street, W.C.), Discussion on Report of Committee on Higher Education and Training of the Deaf.

ANCOATS HOSPITAL, Ancoats, Manchester.
THURSDAY, Nov. 13th.—11 A.M., Mr. F. H. Diggle: Clinical Demonstration. 4.15 P.M., Mr. P. G. McEvedy: Some Simple Forms of Treatment.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Nov. 11th.—4.15 P.M., Dr. J. Wharton: Demonstration of Ophthalmic Cases.
FRIDAY.—4.15 P.M., Mr. J. B. Macalpine: Remarks on Certain Symptoms of Urinary Disease.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINIC.
FRIDAY, Nov. 14th.—3.30 P.M. (at the Royal Infirmary), Mr. Ferguson: Ocular Manifestations of Syphilis.

Appointments

ALLISON, R. S., M.D. Belf., M.R.C.P. Lond., has been appointed Assistant Physician at the Royal Victoria Hospital, Belfast.
SOLTAU, H. K. V., M.D. Lond., Medical Superintendent, Rendlesham Hall, Suffolk.
Certifying Surgeons under the Factory and Workshop Acts: MCCORMIC, J. E., M.B., B.Ch. Durh. (Portishead, Somerset); OWEN, E. D., L.R.C.P. Lond., M.R.C.S. (Neath, Glam); and RAMSAY, A., M.B., Ch.B. Edin. (Fauldhouse, West Lothian).

Vacancies

For further information refer to the advertisement columns.

Albert Dock Hospital, Connaught-road, E.—Asst. Surg.
Birmingham City Maternity and Child Welfare Committee.—Asst. M.O. £500.
Birmingham, Dudley-road and Selly Oak Hospitals.—Asst. Pathologist. £500.
Birmingham General Hospital.—Surg. Cas. O. £400.
Birmingham, Selly Oak Hospital.—Surgeon. £700.
Bradford, Royal Eye and Ear Hospital.—Jun. H.S. £150.
Brighton, Lady Chichester Hospital.—Jun. and Sen. H.P.'s. At rate of £50 and £100 respectively.
Burnley, Victoria Hospital.—H.P. At rate of £150.
Canterbury, Kent and Canterbury Hospital.—Hon. Surg.
Cardiff Royal Infirmary, Venereal Diseases Clinic.—M.O. (part-time). £300.
Chester County Mental Hospital.—Jun. Asst. M.O. £350.
Children's Hospital, Hampstead.—Res. M.O. At rate of £100.
Connaught Hospital, Orford-road, E.—Res. H.S. At rate of £100. Also Hon. Visiting Dental Surgeon.
East Ham Memorial Hospital, E.—Hon. Surg., Hon. Phys. Also Hon. Radiologist.
Edinburgh, Royal Maternity and Simpson Memorial Hospital.—Res. Obstet. Officer, &c. £250.
Elizabeth Garrett Anderson Hospital, Euston-road.—H.P., Obstet. Asst., three H.S.'s. Each at rate of £50. Also Clin. Assts.
Exeter, Royal Devon and Exeter Hospital.—H.P. At rate of £150.
Guildford, Royal Surrey County Hospital.—Asst. Path. £500.
Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—Cas. M.O. At rate of £100.
Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—Asst. in Dept. of Pathology: £350.
Hospital for Sick Children, Great Ormond-street, W.C.—Part-time Jun. Cas. O. At rate of £150. Also H.S. and H.P. Each at rate of £100.
Huddersfield, County Borough of.—Asst. M.O.H. £500.
Hull, Beverley-road Institution.—Asst. M.O. £300.
Hull Royal Infirmary.—Asst. H.P. At rate of £130.
Ipswich, East Suffolk and Ipswich Hospital.—H.S. £120.
Kidderminster and District General Hospital.—H.S. £150.
Liphook, Hants, King George's Sanatorium for Sailors.—Asst. M.O. At rate of £200.
Liverpool University.—Lecturer in Dermatology.
London Jewish Hospital, Stepney Green, E.—Res. M.O., and Cas. O. Each at rate of £150. Jun. Res. M.O. At rate of £100. Also Clinical Assts.
Maidstone, Kent County Ophthalmic and Aural Hospital.—Ophth. H.S. At rate of £200.
Manchester, Ancoats Hospital.—Orthop. H.S. At rate of £100.
Margate Borough.—M.O.H., &c. £900.
Metropolitan Hospital, Kingsland-road, E.—Surg. to Ear, Nose, and Throat Dept.
Middlesbrough Education Committee.—Asst. School M.O. £500.
Newcastle General Hospital.—Sen. Res. M.O. £300. Also H.P. and H.S. Each at rate of £100.
Newcastle-upon-Tyne Hospital for Sick Children.—Res. H.P. At rate of £95. Res. Sen. H.S. Also Jun. H.S. Each at rate of £100.
Northampton County Mental Hospital, Berrywood.—Jun. Asst. M.O. £350.
Northamptonshire County Council Education Committee.—Asst. School M.O. £500.
Northwood, Middlesex, Mount Vernon Hospital.—Res. M.O. £300.
Oswestry, Shropshire Orthopædic Hospital and Agnes Hunt Surgical Home.—Two H.S.'s. Each at rate of £200.
Plymouth Central Hospital.—H.S. £120.
Preston, Biddulph Grange Orthopædic Hospital.—Sen. H.S. At rate of £250.
Preston County Borough.—Asst. School M.O. £600.
Princess Louise Kensington Hospital for Children, St. Quintin-avenue, N. Kensington.—H.P. At rate of £100. Also Hon. Asst. Anæsthetist and Hon. Assist. Dental Surgeon.
Queen's Hospital for Children, Hackney-road, E.—H.P. At rate of £100.
Richmond, Surrey, &c., Joint Isolation Hospital Committee, Hospital, Mogden.—Res. M.O. £400.
Royal Free Hospital, Gray's Inn-road, W.C.—Surg. Reg. £200. Res. H.S. to Ear, Nose, and Throat Dept., Res. Cas. O. £150. Res. Anæsthetist to Gynæcological, &c., Unit. £150. Half-time Gynæcological Reg., Med. Reg., and District Obstetric Asst. Each £100. Also Res. H.S.'s, H.P.'s, Asst. Anæsthetist, &c.
Royal Northern Hospital, Holloway, N.—Two Surgeons.
Ryde, Royal Isle of Wight County Hospital.—Res. H.S. At rate of £180.
St. Mary's Hospital, Inst. of Path. and Research, Paddington, W.—Research Studentship. £200.
Sheffield Royal Hospital.—Ophth. H.S. At rate of £80.
Shoreditch Metropolitan Borough.—Tuberculosis Officer. £750.
Walsall General Hospital.—Cas. H.S. At rate of £120.
West London Hospital, Hammersmith-road, W.—Hon. Reg. to Throat, Nose, and Ear Department.
Westminster Hospital Annexe, 66, Fitzjohn's-avenue, Hampstead. Jun. H.S. At rate of £250.
West Riding of Yorkshire C.C.—Asst. Bacteriologist. £500.
Wigan Royal Infirmary.—H.S. At rate of £150.
Willesden Urban District Council.—Public Vaccinator.
Winchester, Royal Hampshire County Hospital.—H.S. At rate of £150.
Wolverhampton Royal Hospital.—H.S. At rate of £150.
Woolwich and District War Memorial Hospital, Shooters-hill, S.E.—H.S. £100.
Yelverton, Udal Torre Sanatorium.—Res. M.O. £450.
York Dispensary.—Res. M.O. £150.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Market Drayton (Salop), Hoyland Nether (Yorkshire), Cheadle (Staffordshire), and at Church Gresley (Derbyshire).
The Home Secretary gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act for the Districts of the Beverley, Bridlington, Goole, Great Driffield, Kingston-upon-Hull, Pocklington, and Selby County Courts (Circuit No. 16). Applications should reach the Private Secretary, Home Office, Whitehall, S.W., not later than Nov. 22nd.

Births, Marriages, and Deaths

BIRTHS.

ADAMSON.—On Oct. 27th, at Hendon, the wife of A. Fairgrieve Adamson, M.D., of a son.
CAPELL.—On Nov. 2nd, at Cricklewood-lane, N.W., the wife of L. F. Capell, M.B., Ch.B. Edin., of a daughter.
COOKE.—On Oct. 25th, at Chelwood Gate, Sussex, the wife of Dr. Alec Cooke, of a daughter.
VERDON.—On Oct. 20th, at Wellington, S. India, the wife of Major Philip Verdon, I.M.S., of a son.

MARRIAGES.

ANSON—ATTWELL.—On Nov. 6th, at St. Lawrence Church, Ramsgate, Charles Everett Heyworth Anson, M.B., B.S. Lond., to Mabel Winifred, youngest daughter of Mr. and Mrs. J. J. Attwell, of Ramsgate, Kent.
GRAY—SLOAN.—On Oct. 29th, at St. Giles' Cathedral, Edinburgh, James Douglas Allan Gray, M.B., Ch.B., B.Sc., M.R.C.P.E., D.P.H., to Agnes Dorothy Sloan, M.B., Ch.B.
HARRISON—DAVIS.—On Nov. 1st, at Beckenham, Kent, Dr. W. R. E. Harrison to Dr. Mirabel Grace Davis.

DEATHS.

BARRON.—On Oct. 30th, at Lynorne, Shalford, Surrey, Willie Netterville Barron, C.M.G., M.V.O., M.R.C.S., L.R.C.P.
MACALISTER.—On Nov. 2nd, at Guy's Hospital, after a long illness, George Hugh Macalister, M.D., M.R.C.P., late Principal of King Edward VII. College of Medicine, Singapore, aged 51.
MULVANY.—On Oct. 27th, at Hotel Brice, Nice, Edward Mulvany, Surgeon Leiutenant-Colonel, Indian Medical Service, aged 80.
ROBERTS.—On Oct. 27th, at Eastbourne, Charles Gordon Roberts, M.A., M.B., D.Sc., of Banbury, Wash-lane, Clacton-on-Sea, formerly of Halstead, aged 66.
WATTS.—On Nov. 2nd, accidentally drowned, Cecil Francis Watts, M.A., B.Chir., M.R.C.S., L.R.C.P., of St. Bartholomew's Hospital, aged 28.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

SCOTLAND'S CONTRIBUTION TO MODERN MEDICINE.

Abstract of a Broadcast Talk by

SIR LESLIE MACKENZIE, M.D., LL.D.,
LATE MEDICAL MEMBER OF THE SCOTTISH BOARD OF HEALTH.

SCOTLAND, with a long and distinctive history, has retained, within the Union of the Kingdom, its own primary institutions, such as the Law Courts and the Scottish Laws, its system of County and Burgh administration, its central Government Departments—the Department of Health, the Education Department, the Department of Agriculture, the Scottish Registrar-General, and several others. In many ways the administrative bodies, both central and local, differ from those of the other Kingdom. But the main fact is that those bodies are under the general control of the Secretary of State for Scotland, and are worked as independent bodies directly responsible to Parliament through a Secretary of State. Many sections, therefore, of modern medicine take a special colour from the fact that they have been developed in the Northern Kingdom. I shall try to indicate broadly what Scotland has done and is doing to promote the development of modern medicine, using only such matter as appears to be predominately, if not perhaps exclusively, Scottish.

[Sir Leslie here recalled the individual contributions of great Scotsmen like Simpson, Macewen, Ogston, Manson, and Mackenzie to progressive learning, and continued :—]

THE SCOTTISH MEDICAL OUTPUT.

The Medical Register as at date Jan. 1st, 1930, contained 54,870 names of registered medical practitioners. Of this total 26,314, that is about 48 per cent., entered by the English Register; 17,198, that is 32 per cent., by the Scottish Register. This shows, in absolute numbers, a substantial preponderance for England. But if we ask what is the proportion in each country to the total population of each country, the facts reveal a striking difference. England, with a population of some 36,000,000 supports medical schools or examining bodies that produce 26,314 graduates, that is about 0·73 per 1000 of the population. Scotland, with a population of about 5,000,000 supports medical schools or examining bodies that produce 17,198 graduates, that is about 3·4 per 1000 of the population. It is true that the number of graduates has no very direct relation to the total population; but the fact that Scotland is responsible for a number that, in proportion to population, is about five times as great as England's, seems to indicate that, at least proportionally, Scotland plays a greater part in the education of the profession than England does. I am not prepared to discuss the reasons; but it is certain that Scotland does provide a very large part of the medical profession for the Empire and the countries associated with it. This may fairly be interpreted as a testimony to the value of Scotland's teaching contribution to modern medicine. Her great schools are highly equipped in every branch of medical teaching and inquiry. They attract students from the Empire and from many countries outside. The large numbers of Scottish graduates that practise at home or go abroad keep up a constant stream of new students. No schools could succeed in doing this for so long a period if they did not stand on a high plane of equipment and efficiency. I may add, as a modification, that many students may train in England and Ireland and graduate in Scotland, just as many Scottish students may train in Scotland and graduate in England. But, with every modification, the facts are somewhat striking.

MEDICAL RESEARCH.

The researches carried out by Scottish investigators in Scotland constitute an important proportion of the Medical Research Council's output. The Council has established a large number of committees, each in charge of a group of medical problems. These committees include representatives from all interested schools in the United Kingdom, and Scotland has its share. Apart, however, from the Medical Research Council, other research work is carried on for Scottish problems as such. Certain preliminary investigations have been made of rickets and other subjects are under active consideration. Here emerges a somewhat important principle. Should research be dissociated from teaching? In some countries research and teaching are wholly separate and, to a certain extent, this is true in Scotland. But in our Universities the custom has been for the teaching professors to continue researches in their own subjects and also to teach. Speaking generally, all the medical professors and their assistants engage steadily in the investigation of the current problems. One of them has said to me that the maintenance of research in his department gives greater interest and vitality to his teaching and he engages in research because he wishes himself to keep abreast of medical discovery and because it enables him to teach better. This aim tends to keep research practical and to keep practical teaching vitally scientific. But there is room for development here as in other aspects of medicine.

Some years ago an institute was built at Bucksburn, near Aberdeen, for the study of animal nutrition—the Rowett Institute, so named after the generous founder. Two years ago an experiment on a large scale was conducted on the dietetic value of milk and milk products. Groups of children of given ages in elementary schools in Scotland were fed with milk over a period long enough to yield stable results. The effects of whole milk, separate (or skim) milk, and an equivalent amount of biscuit, all as a supplement to the ordinary diet, were worked out statistically. It was found that growth in height and in weight was materially stimulated by the extra ration of milk, but not by the biscuit. The experiment was repeated in a second year and the results were confirmed. At the present moment an experiment of the same kind is proceeding. It involves 20,000 school-children. Like the previous experiment, this is under the general direction of Dr. John Boyd Orr, Director of the Rowett Institute. The details have been arranged through the Department for Scotland. The finance has been provided by the Empire Marketing Board. So far as I am aware, these large-scale experiments in the feeding of school-children in school conditions are exclusively Scottish. It may be added that, in the final report of the first experiment, the diet of some hundreds of families will be found analysed in detail.

SCHOOL HEALTH ADMINISTRATION.

These school researches lead, naturally, to the problems of School Health Administration in Scotland. In 1903 the Royal Commission on Physical Training (Scotland) issued its report, and included two special investigations of random samples of Scottish school-children. The revelations made in these special reports at once excited the interest of Parliament. The Commission definitely recommended systematic medical examination of school-children. In the same year an Inter-Departmental Committee was appointed to report on the larger question of physical deterioration. This committee confirmed the Scottish Commission's report. Later a Scottish Education Bill was prepared and included a clause on medical inspection; later still another bill was prepared; but it was not till 1907 that England obtained powers to examine; and in 1908 Scotland was empowered to require the School Authorities to make a medical

examination of all school-children and to treat necessitous children. A system of School Health Administration, including school clinics, was rapidly organised under these powers. The results to-day are impressive. In the report by the Scottish Board of Health for the year 1928 it is stated that of the 825,440 children attending the 3389 State-aided schools in Scotland some 386,194 were medically examined and treatment was provided for those needing it. The system, starting from almost nothing in 1908, now is carried out by a large number of part-time and whole-time medical officers and school nurses. In this section of work Scotland may fairly claim to have made an independent start. The chief impulse, undoubtedly, came from two members of the Royal Commission—namely, the late Sir Henry Craik, M.P., who was at that date Secretary for the Scottish Education Department, and the late Sir Alexander Ogston, who was the only medical member. A unanimous report resulted.

[After detailing the pioneer work done in Scotland in the control and treatment of tuberculosis the lecturer continued :—]

HOUSING.

The Royal Commission on Scottish Housing was set up in 1912 and issued its report in 1917. Members of the Commission visited every county of the mainland, and also the main groups of islands ; the Orkneys, the Shetlands, and the Inner and Outer Hebrides. The chief recommendation was that an explicit obligation should be placed on the local health authorities to survey the housing of their districts, and themselves to build houses where these were not otherwise provided in adequate numbers. This was the one really new proposal. It was, in principle, a departure of the first magnitude. In 1919 it was embodied in an English Statute as well as in a separate Scottish Statute. Several acts have been passed since then, but the obligation on the local authorities remains. The Commission recommended that some 235,000 houses were needed for Scotland. At date, if we include all houses subsidised by the State, the number actually built since 1919 or in process of building is now over 122,000. There is still a long road to travel, but in this new departure Scotland took a lead of her own. A generation or more must elapse before the effects on the general health can be fairly tested statistically, but all authorities are agreed that the good housing of the people is an essential to the general promotion of health, which is another name for preventive medicine.

HIGHLANDS AND ISLANDS MEDICAL SERVICE.

A special Act of Parliament has sanctioned an annual grant for the provision of an adequate medical and nursing service for the Highlands and Islands. The system stands alone of its kind in Great Britain. It has been explicitly recognised as the inspiration of the Frontier Nursing Service in the Appalachian Mountains of Kentucky, and full information has, on request, been furnished also to the authorities of Newfoundland, the Province of Ontario, and areas in South Africa. Over £600,000 were expended in the first 14 years in subsidising doctors and nurses, in the provision of doctors' and nurses' houses, subsidising of hospitals, appointing of resident operating surgeons in selected centres, and other elements of a medical service.

POISONOUS EFFECTS OF ETHYLENE OXIDE.

THE results of an investigation of the response of guinea-pigs to ethylene oxide made by C. P. Waite, F. A. Patty, and W. P. Yant, of Pittsburgh, have been published by the United States Public Health Service.[1] The object of the work was to estimate the hazards involved in exposure to certain chemical products which have recently reached, or promise to reach, important domestic and industrial use, and of which ethylene oxide is an example. The uses to which it is at present put are as intermediate in the synthesis of compounds such as methyl, ethyl, and butyl cellosolve, and as a fumigant, either alone or mixed with carbon dioxide, in which capacity it acts by stimulating the respiration of insects. The authors found that guinea-pigs exposed to the vapour showed, first, signs of nasal irritation, as indicated by scratching at the nose, ocular irritation with lacrymation and squinting, and later blood-tinged, frothy serous exudate from the nostrils, unsteadiness and staggering ; finally, the animals were unable to stand, respiration increased in rate and amplitude, until a state of gasping dyspnœa was reached accompanied by the use of accessory muscles and raising of the head ; death followed. Guinea-pigs exposed to 1·4 per cent. concentration fell and lay on their sides in 50 to 107 minutes, while exposure to 0·7 per cent. caused all animals to fall in 150 minutes. The first effect of higher concentrations—8·5, 6·4, and 0·7 per cent.—was to increase the depth and amplitude and to slow the rate of respiration in 13, 17, and 35 minutes respectively. With exposure to smaller concentrations, such as 0·13 and 0·06 per cent., irritation of the eye and nose were the principal symptoms, while with 0·025 per cent. no distinct symptoms were observed. Pathological examination of the animals which died as a result of exposure, either within a few hours or after several days, showed the presence of a marked irritation of the respiratory system, with the super-imposition, in the animals which died late, of lobar or lobular pneumonia and parenchymatous changes in the kidney. The observers conclude that in the case of guinea-pigs 0·3 to 0·6 per cent. for 30 to 60 minutes is dangerous to life, 0·3 per cent. is the maximum for 60 minutes without serious disturbance, and 0·025 per cent. is the maximum allowable concentration for several hours without serious disturbance ; 5 to 10 per cent. causes death within a few minutes. In toxicity ethylene oxide is less harmful than hydrogen chloride and sulphur dioxide, more harmful than chloroform and carbon tetrachloride, and similar to ammonia. It has not enough smell to give warning of harmful concentrations, but the distinct irritation of the nose to which it gives rise, even in comparatively safe concentrations, should be taken as warning of a dangerous atmosphere.

[1] U.S. Public Health Reports, 1930, xlv., 1832.

THE CLINICIAN AS PATHOLOGIST.

IN the course of a presidential address delivered to the Manchester Pathological Society on Oct. 8th, Dr. E. Bosdin Leech discussed the development of pathology as a separate science and regretted the specialisation which prevented physicians and surgeons from obtaining an early training in the post-mortem room. Last century, he said, the study and teaching of pathology had diverged along two different lines. In some places its teaching remained in the hands of physicians and surgeons of observing habit who conducted their own post-mortem examinations. Their juniors, who might do the mechanical part of the work and for the time being devote themselves entirely to pathology, were simply laying a scientific foundation for their diagnostic and therapeutic work in the wards and outside. In other places it fell into the hands of specialists, men who were to devote their whole lives to pathology and had no intention of undertaking treatment. Deeper knowledge and the increase of specialties inside pathology itself had now made it necessary for pathology to be carried on by specialists, but Dr. Leech urged that in the pathological departments of our big hospitals some attempt should be made to attract the young physician and the young surgeon to pass part of his waiting period in the post-mortem room. It would be for the good of medicine. Sir Humphry Rolleston had said that no physician has ever recovered from having omitted to serve a long practical apprenticeship in the post-mortem room. Dr. Leech realised that the budding physician and surgeon could not specialise in all the modern branches of pathology, but he must learn

some good old-fashioned morbid anatomy. In England and to a lesser extent in France pathology had in general been taught by the physicians and surgeons. No better example of this type of teaching could be chosen than that of Guy's Hospital. There a series of brilliant men, Bright, Addison, Hodgkin, Wilks, showed what could be done by practising physicians, and the surgeons were in no degree behind them. The specialist type of teaching throve in Germany and Austria; notable examples of great teachers were Virchow, Koch, and Rokitansky. Dr. Leech, reviewing the developments in the middle of the last century, concluded that though the specialist work brought out a greater number of brilliant discoveries, the retention of post-mortem work in the hands of the clinicians produced the better practitioners.

A MASSAGE DIRECTORY.

WE have received a directory of the members of the Chartered Society of Massage and Medical Gymnastics who are in private practice. They have formed a group known as the Private Practitioners' Association to safeguard their interests and have issued a list in order that the medical man or woman may see where to find a member of the C.S.M.M.G., what his/her qualifications are, and what work he/she is prepared to undertake. The directory is intended only for doctors, as members of the Association have voluntarily adopted an ethical code which pledges them to work only under the direction of a registered medical practitioner. As this pledge prevents them from accepting work which might come to them directly, the Association claims with some justice the support of the doctor in utilising the services of its members. The directory, which is on a county basis, gives postal and telephone address as well as the kind of treatments which the member will undertake from massage, medical electricity, diathermy, radiography, colonic lavage, down to foam baths, steam baths and Bergonié treatment. Our only criticism is that the arrangement under counties makes it difficult to find at a glance whether a member of the Association is available in such and such a locality. In another edition we would suggest a further index of towns. A copy will be sent post free to any medical practitioner on application to the Secretary, P.P.A., Hygeia, Falmouth, Cornwall.

SCIENCE DISCIPLINE.

Sir David Prain, I.M.S., F.R.S., chose this subject for the second annual Alexander Pedler Lecture (founded by the British Science Guild) which he gave on Oct. 22nd in the University of Liverpool.

Huxley, he said, held that in an ideal university a man should be able to obtain instruction in all forms of knowledge, and discipline in the use of all methods by which knowledge might be obtained. Science no longer connoted all knowledge, but meant more particularly "natural knowledge." Science discipline, therefore, implied cultural exercise of every method by which natural knowledge could be obtained, as contrasted with science training, which implied technical exercise in any method by which natural knowledge might be employed. The sole object of science training was to make an adequate number of scholars, already disciplined in the requisite natural knowledge, competent to give the general community effective, scientific help. The purpose of discipline was two-fold: on the one hand to furnish those who wished to serve the community scientifically with the kind of natural knowledge that would enable them to profit by training for technical efficiency; and on the other hand, to render all scholars in any ideal university competent to appreciate the scientific help afforded the community by those specially trained to give it.

It needed the lesson of the Great War to convince our legislators of the truth that "what people call applied science is nothing but the application of pure science to particular problems," and an Association for the advancement of science had to reach its hundredth year before it found a president courageous enough to say that between pure and applied science there was no real distinction. There was room for hope that academic opinion might now cease to consider second-rate advancement more important than first-rate application of natural knowledge. General cultural science discipline was the proper business of faculties of arts, not of science. A special scientific discipline, preparatory to technical training, also had its place within the universities, and demanded recognition and special organisation. Sound practical instruction in the elementary facts and broad principles of biology should form part of the arts curriculum. The absence of any serious attempt on the part of those entrusted with university organisation to devote themselves to the "patient study of scientific teaching" in their faculties of arts, was directly responsible for much of the justifiable disquietude felt by both teachers and scholars of natural knowledge to-day. It was of less consequence for teachers of science to fail to distinguish between the functions of a technical and a cultural faculty, than to fail to make their universities understand the difference in method between the science discipline for culture and the science discipline that prepared for training.

SMALL-POX AND THE PUBLIC.

To the Editor of THE LANCET.

SIR,—The modern attitude towards small-pox is here exemplified. A school-teacher in Bethnal Green had nine children away one recent Monday. By Friday eight were reported to be small-pox victims, but it was not until the following Tuesday that the father of the ninth thus excused the absence of his daughter. I give his exact words:

"Madame and Miss, excuse Amelia being away but she has been under the doctor who could not diagnose her. First she was off her food, very quiet and lifeless, then she was irritable and cross. Her mother thought she was about to become a female, but it was *only* the small-pox after all."

Amelia returned to school very pock-marked and, incidentally, also a "female"!

I am, Sir, yours faithfully,

C. BERKELEY WAY.

BRITISH SPA FEDERATION.

THE manager of Droitwich Spa informs us that although Droitwich has not joined the official scheme for treating insured persons (described on p. 975 of our last issue), it nevertheless belongs to the British Spa Federation, and receives a number of patients belonging to this category from various sources.

"THE THREE-CARD TRICK."

REFERRING to a note under this title in our last issue (p. 1000), Dr. C. W. Hutt points out that Holborn was the first authority to undertake anti-diphtheria immunisation at a maternity and child welfare centre. This work was begun so long ago as 1922.

CONTRIBUTORY PENSIONS LEGISLATION.

A SHORT summary of contributory pensions legislation recently published[1] may help those who wish to verify the claims of prospective pensioners. There is an occasional trace of preoccupation with the Scottish application of the law; thus the Contributory Pensions (References) Regulations (Scotland) of 1925 are specifically mentioned, but not the corresponding English regulations of 1928. The handbook is, however, a useful guide to both the English and Scottish provisions of the principal Act of 1925 and the copious amendments made last year. One such amendment, it may be remembered, lifted the disqualification imposed on inmates of poor-law institutions in a case where a patient has entered the institution merely to obtain medical or surgical treatment.

[1] Handbook of Widows', Orphans', and Old Age Contributory Pensions. By T. P. M'Donald, M.A., LL.B., advocate, and George Davie, B.L., Solicitor. Edinburgh and London: W. Hodge and Co. 1930. Pp. 104. 3s. 6d.